OUTSIDE MACHINERY STANDARDS FINAL REPORT 8 WORK MANAGEMENT MANUAL

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TASK ES-8-21

OUTSIDE MACHINERY STANDARDS - FINAL REPORT

THE NATIONAL SHIPBUILDING RESEARCH PROGRAM

Task ES-8-21
Data Development of Detail Standards
For Outside Machinery Operations

CONDUCTED T:

Industrial Engineering Department
Ingalls Shipbuilding Division
of Litton Systems, Inc.
P.O. Box 149
Pascagoula, Mississippi 39567

December 1983 through January 1985

FOR:

Bath Iron Works Corporation 700 Washington St. Bath, Maine 04530

The Society of Naval
Architects and Marine Engineers
Ship Production Committee
Sp-8 Panel on Industrial Engineering

The U.S. Department of Transportation
Maritime Administration

PREFACE

This project was performed as part of the National Shipbuilding Research Program, under subcontract to Bath Iron Works Corporation. Funding was provided jointly by the Maritime Administration (MarAd) and the U.S. shipbuilding industry. Administration of this project was through the Society of Naval Architects and Marine Engineers (SNAME) Sp-8 panel on Industrial Engineering. Performance of the project was by the Industrial Engineering department of Ingalls Shipbuilding.

It is noteworthy that this was the first standards development project under the National Shipbuilding Research Program funded by MarAd that involves shipboard activities.

The time standards in this project were developed using the Maynard Operation Sequence Technique (MOST). MOST is a predetermined motion time system.

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INTRODUCTION

In December of 1983 Ingalls Shipbuilding assumed an active part in Maritime Administration's Ship Producibility Research Program. At that time the Industrial Engineering department at Ingalls began to work on Task ES-8-21, the Data Development of Detail Standards for Outside Machinery Operations. The purpose of this project was twofold. First, -it was to provide the shipbuilding industry with a set of universal. standards for Outside Machinery operations. Second, it was to identify specific areas where methods improvements could be made to benefit both Ingalls and the U.S. Shipbuilding industry.

The following steps were taken to complete this project:

a. The standards data for Outside Machinery that already existed at Ingalls was reviewed. Data found to be obsolete was targeted as areas to develop MOST standards.

- b. A list of jobs to be studied during the time schedule of the project was developed and the machining equipment specifications were procured.
- c. The Operation Formulae Standard data was developed.
- d. A standards manual format was submitted to the Sp-8 panel for approval.
- e. The shipboard machining and equipment installation standards were developed.
- f. The standards were validated.
- g. The standards manual and final report was prepared and presented to SNAME sp-8 panel for approval.

FINDINGS, RECOMMENDATIONS, AND RESULTS

Several areas were identified for improvement during the observation of machining and equipment installation activities aboard ship. These areas include: Excessive Travel for Tools, Equalization of Tool Distribution between Tool Rooms, and Equipment Capability Verification.

Excessive Travel For Tools

It was observed that some machinists were reporting to the job sites without all of the required tools to perform the job. Numerous trips were made off the ship for additional tools.

After analyzing the problem of excessive travel for tools, the project After team suggested that tool lists (see figure 1) be developed for each job. These tool lists would list all of the necessary tools required to perform each job. The machinist could then easily gather all of the tools required before going aboard ship. This would help eliminate additional trips off the ship to obtain tools because of neglect, lack of planning, or inexperience on the part of the machinist. Studies reveal that elimination of excessive travel for tools could potentially save \$963,000 annually in labor costs.

BOAT HANDLING WINCH INSTALLATION MACHINIST TOOLS REQUIRED

- 1. 6 in. Steel Scale (Rigid)
- 2. Drill Bits (17/32 in. & 25/32 in.
- 3. Hammer
- 4. Center Punch .
- 5* Portable Magnetic Base Drill
- 6. Scriber
- 7. File (for filing chocks)
- 8. C-Clamp
- 9. Ratchet (1/2 in. Drive)
- 0 Socket (1-1/4 in.)
- 11. Fixed End Wrench (1-1/4 in.)
- 12. Reamers (Various sizes 3/4 into
 1 in.)
- 13. Feeler Gage .
- 14. Level

Figure 1. Sample Tool List

The project team presented its finding and recommendation concerning excessive tools to the Outside travel for Machinery management (general and foreman). superintendent response to this recommendation was The General Superintendent excellent. asked his foreman to have supervisors begin to develop tool lists for jobs. The supervisors would then distribute the tool lists to employees just before they went to work on those specific jobs. Initially the supervisors did develop tool lists for a few jobs. However, as time passed, supervisor's enthusiasm for developing tool lists gradually decreased because of the multiplicity of responsibilities in other areas.

In an effort to revive the implementation of this recommendation, the Industrial Engineering department, with the cooperation of the Production

Planning department, researched and developed a means by which to print tool lists on the bill of material. This method would involve only a amount of effort on the minimum production planner's part. First, a production planner writes the bill of material as he normally does. would planner identify the descriptions of each major piece of equipment on the bill of material (examples: waste heat boiler, chill high pump, pressure dehydrator, air conditioning plant, Immediately after this step, the planner would match each major piece of equipment to a four-digit tool This code number list code number. would be obtained from a predeveloped matrix (see figure 2). Finally, the code number, hull, and bill of material numbers are typed into the computer by the planner. The planner would utilize the Technical Information Data Base (TIDB) Text system. The utilization of this system would produce tool lists that would be a part of the computer generated bill of material figure 3). Use of this system would allow the machinist to easily refer to He could then gather the tool list. tools as he is gathering the necessary materials.

		ı
ccount No.	Item Description	Tool List Code No.
2501	Air Filter	5312
2501	Bellmouth	7003
2501	Centrifugal Fan	6115
2501	Cooling Coil	9387
2501	Precipitator	2115
2501	Unit Cooler	3879
2501	Unit Heater	2265
2501	Vaneaxial Fan	0000

Figure 2. Sample Account/Item-to-Tool List Code No. Matrix

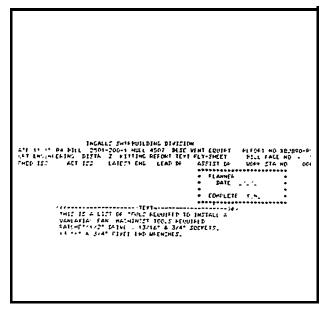


Figure 3. Printed Tool List on Bill of Material Form

During this project, 14 tool lists were developed for various outside machinery machining and installation activities (see figure 4). In order to fully implement this program, a company must develop tool lists, then tool lists must be input into the text system and code matrices must be developed for each account. An IE coordinator would

be needed to perform these functions. This coordinator would also interact with both the planning department and the craft during the implementation period to ensure proper use and continued utilization of the program (see figure 5).

Five-Inch Gun Mount Facing
Main Engine Pad Face Milling Stern Tube Boring
Waste Heat Boiler Installation
Air Conditioning Plant Installation
Chill Water Pump Installation
H. P. Air Dehydrator Installation
Boat Handling Winch Installation
Vaneaxial Fan Installation
Sewage Pump Installation
Bridge Crane and Rails Installation
Convection Oven Installation
Hoist and Monorail Installation
Cooling Coil Installation

Figure 4. Tool Lists for Specific Jobs Developed Under Task ES-8-21

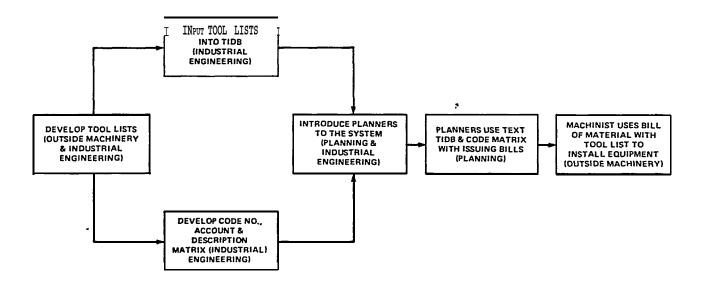


Figure 5. Tool List Program Network Diagram

Tool Rooms - Equalization of Tool Distribution

A problem identified early in the project was the subject of tool distribution between tool rooms. It was discovered that machinists in the bay areas of the shipyard had to travel to the wetdock tool room to obtain tools, although a tool room existed in the Bay 3 area (see figure 6).

There were several reasons that this condition existed. One reason was that variety the large and requirements of Outside Machinery tools would not allow a full selection of tools to be stored in the smaller Bay 3 Another reason was that the facility. machinists in the bay area make up a small percentage of the total shipyard population in the bay area. The bay 3 tool room was purposely stocked to support hull and "pipe craftsmen who make up the majority of the workers in that area.

In response to this problem, the project team suggested to the Outside

Machinery management that some of $th_{\rm e}$ tools . commonly used by outside machinists be transferred from the wetdock building tool room to the Bay 3 area tool room.

After presentation of а recommendation to Outside Machinery management, the General Superintendent of Outside Machinery requested that the tool room perform a study to determine the high usage tools for Outside Machinists. After this study was performed some of these tools were transferred to the Bay 3 tool room in June 1984. At the time of this report an expansion of the Bay 3 tool room into the paint storage facility next door was planned. This will allow even more outside machinery tools to be stored in the Bay 3 tool room. delay studies were performed to determine the cost of this excessive travel. These studies reveal elimination of this excessive travel would result in an annual labor savings of \$39,000.

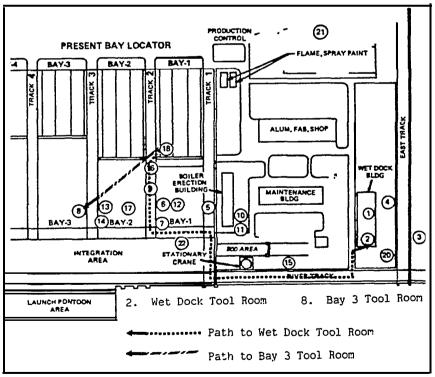


Figure 6. Wetdock Tool Room Versus Bay 3 Tool Room Travel Comparison

PROJECT ACTIVITIES

The performance of this project was divided into seven major activities. activities were Existing These Work Item Review, Standards Data Selection and Machining Equipment Operation Specification Procurement, Standards Development, Formulae Standards Manual Format Development, Application Standards Development, Standards Validation, and , Standards Manual Development.

Existing Standards Data Review

The first activity performed was a review of the existing MTM developed Outside Machinery Standards. standards were developed from 1969 to They were based on the methods, 1971. tools, equipment, and facilities then available at Ingalls. A comparison was made to the current methods, tools, equipment, and facilities to determine if the standards were still applicable to current operations.

In reviewing the existing standards several problems were discovered. The majority of the standards were not applicable to the shipyard's current operations for the following reasons:

- items installed or The manufactured in the existing have changed in standards since configuration standards were developed.
- standards 1 Some of the included stop watch times where predetermined times can be developed.
- Work formerly considered Outside Machinist work is now performed by other crafts.
- installed. The itms or manufactured in the existing standards are being installed manufactured different method.

In general, the majority of the Outside Machinery MTM-developed standards were applicable to current shipyard conditions.

Work Item Selection and Machining Equipment Specifications Procurement

In order to develop a good operating plan for manning purposes, a list of items and operations to be studied during the time frame of the project had to be selected.

The next step taken was to obtain the outside machinery equipment specifications from Manufacturing Engineering. Speeds and feeds information for various materials was obtained to use in the development of process times.

Operation Formulae Standards Development

One of the objectives of this project was to produce a set of universal time standards for basic outside machinery operation formulae functions. The standards were developed to perform this function. These operations included Job Preparation, Area Travel (which applies to Ingalls only), Layout for Drilling, Drilling, and Boltup.

Standards Manual Format Development

A standards manual format was developed and submitted to the SNAME Sp-8 panel for approval. The manual included 10 sections: Scope, Standards Manual Use, Standards Application, Operation Formulae, Layouts and Material Flow. Facilities and Allowances, Equipment, Standard . Practices and Policies, Process Date, "and Data Synthesis and Backup Data.

Application Standards Development

Standards were developed for 14 shipboard outside machinery jobs. Three of these jobs involved shipboard machining: Five Inch Gun Mount Facing, Main Engine Pad Face Milling, and Stem Tube Boring. Eleven of these jobs were shipboard equipment installation: Waste Heat Boiler, Air Conditioning Plant, Chill Water Pump, High Pressure Air Dehydrator, Boat Handling Winch, Vaneaxial Fan, Sewage Pump, Bridge Crane and Rails, Convection Oven, Hoist and Monorail, and Cooling Coil.

Standards Validation

The standards developed in this project were validated by reviewing and verifying the methods, tools equipment, layouts, and standard time development.

Standards Manual Development

A manual containing the instructions on how to apply the standards developed during the period of this project. This manual contains all of the supporting information and was submitted to SNAME sp-8 panel.

PROJECT SPIN-OFF

A problem occurred in the application of the drilling process time charts (see figure 7). Initially, it was difficult to find an American Iron and Steel Institute (AISI) equivalent for the MIL-SPEC Number of various naterials. Ingalls foundation drawings identified material by its MIL-SPEC Number.

However, the tables from which the drilling process time charts were

developed used AISI designations to identify materials (see figure 8). Being unable to compare the AISI equivalent number to the MIL-SPEC number would have rendered the project team incapable of using the drilling process time charts.

After a significant amount of research had taken place, a metallurgist, J. M. Earley, at the National Bureau of Standards was contacted. Working in

	PROCESS TIME FOR DRILLING ONE INCH DEPTH HOLES IN TMU'S							
						, , , , , , , , , , , , , , , , , ,		-
MAT'L &	1715"	178"	174"	1/2"	3/4"	1"	1-1/2"	2"
COND.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	BIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HDLE	HOLE	HOLE
ł i								
8881	3.63	158	190	190	190	21.1	285	304
8882	273	151	182	182	182	202	273	291
8883	390	202	242	242	242	269	364	422
8884	390	202	242	242	242	269	364	388
0005	390	202	242	242	2421	269	364	422
9006	0	420	420	560	504	560	672	747
8087	0	682	310	910	1024	1213	1538	1986
9008	0	910	1213	1456	1560	1518	2185	2913
0009	341	173	208	288	208	231	312	333
9010	341	165	198	198	198	220	298	317
6611	455	242	354	415	437	485	582	647
8012	390	202	242	242	242	269	36.4	288
0013	420	227	273	303	341	420	455	496
8014	455	390	390	445	468	520	£24	693
0015	9	546	546	728	655	728	874	971

Figure 7. Sample Drilling Process Time Chart

conjunction with the metallurgist, it was determined that if the following information could be found for the material being drilled the process time charts could be utilized.

- The major class the material
 belongs to (Ex. Plain Carbon
 Steel)
- l The percent of carbon content
- 1 The Brinell hardness.

The information derived from this method has not only helped in determining AISI equivalents for the purposes of this project but for other projects in the department.

MATERIAL CAT							11(9	aches	i Errel	14			Г
MATERIAL AND		***	į	l			NE DOS	BLE BI	162	bes			228
CONDITION CODE	MIESIEL	#155 \$44	C04911194	SPEER Spa	1/18	1.78	1/4	12	14	-	117	,	Baifaia Baifaia
0001	gear-laparitied break greatained eati greatained]88 to [%0	Hot Rolled or Annealed	-10 115	.001	.001	, cos	.010	.015	.01K	, 029	.424	M10 M7 M1
0002	\$1117 1215 \$1117 1212 \$1113 1713 1113 1212-7e	150 to 200	Cold Drawn	100 120	- 1001	.075	.005	.010	.015	.018	.020	.024	M10 M7 M1
0003	Resulphoraged 1182 1128 1183 1125	100 to 150	Hot Rolled or Annealed	70 90	.001	.003	.005	.010	.015	.018	.020	.023	M10 M7 M1
0004	1115 1144 1117 1711 1118	150 to 200	Cold Drawn	70 90	.001	.003	.005	.010	.015	.018	.020	.025	М10 М7 М1
0005		175 to 225	list Rolled, Normalized, Annualed or Culc Brawn	70 90	.001	.003	.005	,010	.015	.01R	.020	.023	M10 M7 M1
0005	Bessiphurzzed 122 1241 132 2145	275 to 125	Quenched and Tempered	65	•	.002	.004	.006	.010	.012	.015	.018	M10 M7 M1
0007	1138 (148 1123 (151 *148	\$25 *0 175	Quenched and Feinpered	40	•	.002	.003	.006	.008	.00-)	.010	.011	7 15 M13
0005		175 10 125	Quenched and Lempered	30	-	.002	.001	.005	.007	007	.010	.010	TIS TIS
0009		ten te ten	re r R died, Seern attred, Asserted or Cord Drawn	105 80	- 100	.004	,005	.010	.015	,018	-1920	.075	M7 M1
D010		1-0 to 2 n	Hot Rollel, Surrelized, Americal or Loss Drawn	80 110	.001	.004	,004	.010	.015	оік	.020	0,44	MT MT
0011		200 to 250	ios Rolled, te smalized, Arnealed or field Drawn	60 75	.001	.00.	.004	.007	010	.012	.015	AEO.	M10 M7 M1

Figure 8. Sample Material/Condition Code Description Matrix

TASK ES-8-2 1
OUTSIDE MACHINERY

WORK MANAGEMENT MANUAL

THE NATIONAL SHIPBUILDING RESEARCH PROGRAM

Task ES-8-21
Data Development Of Detail Standards
For Outside Machinery Operations

CONDUCTED AT

Industrial Engineering Department
Ingalls Shipbuilding Division
Of Litton Systems, Inc.
P.O. Box 149
Pascagoula, Mississippi 39567

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Ingalls Shipbuilding

The project team is indebted to the following people who also made contributions to the development of this manual: R. D. Harper, Section Manager of Industrial Engineering at Ingalls who provided the project team with a copy of the Machining Data Handbook; The management and employees of the Outside Machinery Department who provided the project team cooperation and resource information; J. Earley, Metallurgist at the National Bureau of Standards who provided a method of translating a Mil. Spec into an AISI (American Iron and Steel Institute) equivalent; Louis Pennell, Industrial Engineer at Ingalls who provided invaluable delay study information. Finally, the project team would like to thank God who provided the wisdom required to complete the project.

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INGALLS	W M - M A N U A L	DATE 10/8/84
Shipbuilding		SIGN. TLC
	SECTION 1 SCOPE	PAGE I-1

This project was performed as part of the National Shipbuilding Research Program, under subcontract to Bath Iron Works Corporation. Funding was provided jointly by the Maritime Administration (MarAd) and the U. S. shipbuilding industry. Administration of this project was through the Society of Naval Architects and Marine Engineers (SNAME) SP-8 panel on Industrial Engineering. Performance of the project was by the Industrial Engineering department of Ingalls Shipbuilding.

It is note worthy that this was the first standards development project under the direction of the National Shipbuilding Research Program as funded by MarAd that involves shipboard activities.

The purpose of this manual is twofold. First, it is to provide a set of outside machinery time standards that are generally adaptable to any shipbuilder within the industry. Second, it is to provide some application examples of these standards. The operation formulae section of this manual fulfills the first provision. The standards application section fulfills the second provision. The remainder of the manual is support information to enhance the readers understanding of these two sections.

The time standards in this project were developed using the Maynard Operation Sequence Technique (MOST). MOST is a predetermine motion time system. More specifically, the Basic MOST System was used.

It is important to note that the standards developed in this manual are <u>time-standards</u> not <u>application standards</u>. A time standard by definition is the necessary time to perform a job at the 100 percent performance level including allowances for human fatigue, personal time, and unavoidable delays. An application standard is a time standard with the addition of avoidable delays and labor performance adjustments.

Utilization of this data must consider the location where the work will be performed (shipboard or shop); the type of work system the employees are functioning under (day work, measured day work or incentive) and the specific labor practices that apply at their location before determining an application standard.

The data collected for this manual was obtained from observation of work on Ticonderoga (CG 47) class cruisers under construction at Ingalls Shipbuilding.

		CODE
INGALLS	W M - M A N U A L	DATE 10/22/8%
Shipbuilding		SIGN. TLC
	T SECTION 2 STANDARDS MANUAL USE	PAGE 2-1

This section was developed to give instructions on the use and design of this standards manual. Below is an index showing how this section is constructed.

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GENERAL INFORMATION

Any properly constructed Work Management Manual is designed such that, the various parts are interactive and work together to perform a specific function. This Work Management Manual is designed in this manner. The various sections of this manual are linked together to accomplish four basic functions (see page 2-3):

- 1. <u>Explanation</u> of purpose and operation of manual.
- 2. Provide Application examples.
- 3. Provide General Operation Standards.
- 4. Provide <u>Support Data</u>.

The interaction between the various manual sections (see page 2-4) allows the tracing of a unit of data throughout the system, all the way from the appropriate work place layout to the time standard.

INGALLS Shipbuilding

WM - MANUAL

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DATE 10/22/84

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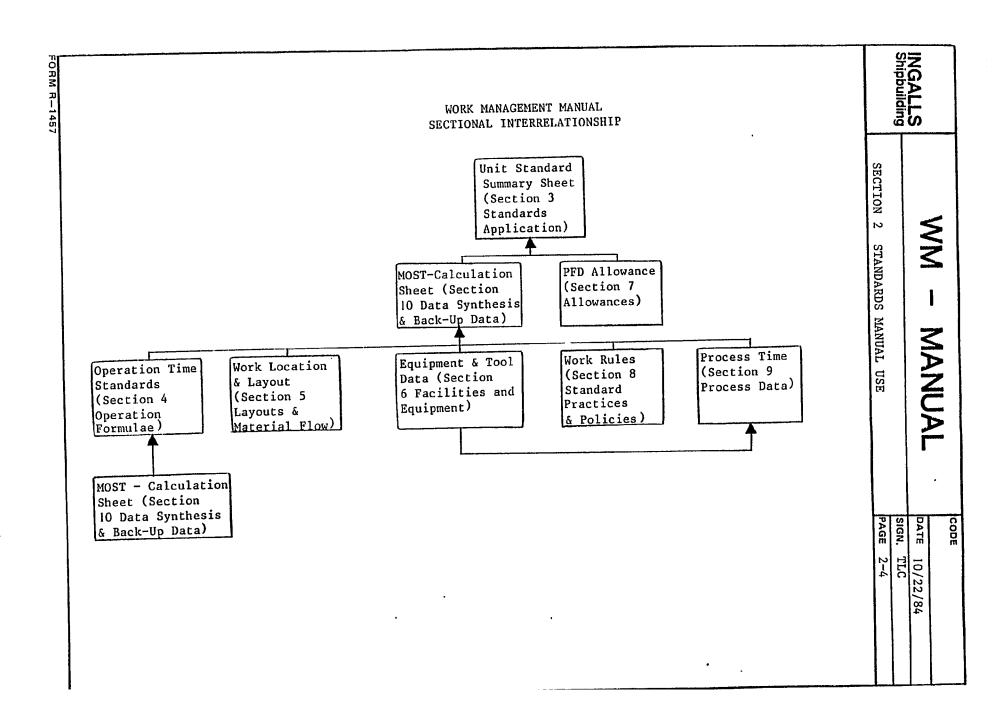
SECTION 2 STANDARDS MANUAL USE

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WORK MANAGEMENT MANUAL ORGANIZATION

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SUPPORT DATA	Section 5 Layouts & Material Flow Section 6 Facilities & Equipment Section 8 Standard Practices Section 9 Process Data Section 10 Data Synthesis & Back-Up

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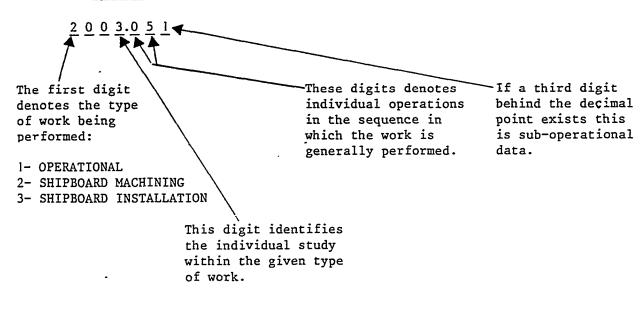
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SECTION 3 STANDARDS MANUAL USE

MOST Calculation and Back-Up Data
Coding System

Throughout the manual there are numbers (varying from 6 to 7 digits) called codes. These codes relate to the detail MOST calculation forms which provide the basis for the standards included in the manual. The Data Syntheses and Back-Up Section of the manual contains the MOST calculation forms in code number order (See page 10-1).

EXAMPLE:



NOTE: Because of the volume of the data, the area travel detail back-up code information was not included in the data synthesis and back-up section of the manual.

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Page Numbering System

The pages in this manual are numbered using a two position numbering system.

- EXAMPLE:

4 - 20

The first position denotes the section of the manual in which the page is located.

The second position denotes the sequential page number within the section.

In the above example the page number 4--20 is the twentieth page in section4,"--Operation Formulae.

		CODE
INGALLS	W M - M A N U A L	DATE 10/22/8%
Shipbuilding		SIGN. TLC
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STANDARDS APPLICATION USE

The purpose of Section 3, Standard Application, is to provide some application examples of the operational standards. The Standards Application Section also provides time standards for some common outside machinery machining operations and equipment installation examples.

The first part of Standards Application, pages 3-1 through 3-15, contains the unit standard summary sheets. The key information revealed on these sheets is:

- o The operations involved
- o The required manning
- o The operational and total standards for the job.

To learn more about the standard time development of the operations or elements refer to the appropriate code no. (see sample on page 2-8) in Section 10, Data Synthesis and Back-Up.

The second and third parts of Standard Application contain further detail. To learn more about the use of these standards refer to the Applicability Analysis for Machining Operations (p. 3-16) or Applicability Analysis for Equipment Installation (p. 3-17). To obtain a description of the equipment itself refer to the Machinery Units Descriptions (p. 3-18) or Installed Equipment Descriptions (p. 3-19 through 3-24).

CODE WM - MANUAL INGALLS DATE 10/22/84 Shipbuilding SIGN. TLC PAGE 2-8 SECTION 2 STANDARDS MANUAL USE **MOST** - calculation 3007.00 UNIT STANDARD SUMMARY INGALLS Shipbuilding DATE \$/14/34 AND MOST CALCULATION SIGN. FLE SHEET RELATIONSHIP SEWAGE PUMP INSTALLATION PASE 10-148 INSTALL SELF LOCKING FASTNER 1.\ Locate the operation ASSEMBLY AREA code on the Unit Standard NO. METHOD NO. SEQUENCE PODEL FR TMU Summary Sheet. Identify 141 246 A- 6 G (A2) 5 0 % RIGGER PLACE UNIT ON the same code on the MOST ~ FOUNDATION a . , calculation sheet in G • Section 10. (Calculation G 4 3 <u>_</u> 2 REPOSITION BOLTS sheets are in code number G $\overline{}$ (CODE 1005 .03) order) 3 G A G 3 INSTALL SELF LOCKING G NUTS 518" (CODE 100%.05) CODE WM - MANUAL DATE 5/14/84 INGALLS Shipbuilding SIGN SEWAGE PUMP INSTALLATION . G --G UNIT STANDARD SUPMARY a _ G ASGABP ABPA AEGAEP ARDA ABGABP ABPA OPERATION TOTAL. REQUIRED ABGABP STANDARD OPERATION STANDARD OPPRACTION ABGABP DESCRIPTION IN TMU'S ARZA MANNING IN THU'S CODE ABGASP ABPA 27.467 27,467 1.0 3007.01 Job Freparation AEGABP ARPA AEPA ASGASP Area Travel 14.150 14,160 1.0 3007.02 ABGAB? ABPA 15,666 1.0 15,666 3007.03 Remove Temporary Mounts ABGABP ABPA Layout & Drill Holes In ABGABP ABPA 3007.04 36,704 1.0 36,704 ABGABP ASPA Faundation ABGABP ABPA Install Permanent Mounts 6,650 1.0 6,650 3007.05 ABGAE ABPA 3007.08 Install Self-Locking 410 12 4920 18,228 18,228 Fasteners 1026 8 8208 1215 4 4860 SUBTOTAL 23,775 PFD # 20% <u>′2</u>` TOTAL 142,650 2 The standards in TMU'S on MOST calculation sheet will be the same as that under the OPERATION STANDARD IN TMU'S column on the Unit Standard TOTAL UNIT STANDARD Summary Sheet. 1.43 HRS.

		CODE
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	SECTION 2 STANDARDS MANUAL USE	PAGE 2-9

OPERATION FORMULAE USE

One of the purposes of this manual was to provide a set of outside machinery standards that are generally applicable to any shipbuilder within the industry. The operation formulae section of the manual was prepared to this end.

Section 4, Operation Formulae, provides time standards for five basic outside machinery operations. These operations are Job Preparation, Area Travel, Layout for Drilling, Drilling, and Bolt-Up.

On the first page of Section 4 is an index of code numbers and page numbers for each operation formula. Each formula except Area Travel begins with a formula applicability sheet which explains the activities that are included in the time standard. The formulae continue with charts detailing the application of the time standards.

It is important to realize that the time standards in the operation formulae section does not contain any allowances for PF & D (personal time, fatigue and unavoidable delays).

All of the standards contained in the operation formula section, except Area Travel, are applicable to any location. Area Travel is applicable only to Ingalls Shipbuilding.

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	SECTION 2 STANDARDS MANUAL USE	PAGE 210

SUPPORT DATA SECTIONS

The <u>Layouts and Material Flow</u> section of the manual (section 5) contains drawings of equipment locations aboard ship and process flow charts. See index on page 5-1.

The <u>Facilities and Equipment</u> section of the manual (section 6) contains tool lists for specific jobs, machining equipment specifications, and the list of required personal tools for a machinist.

The $\underline{\text{Allowances}}$ section of the manual (section 7) contains the development of the PF & D (Personal, Fatigue and Delay) factor used in this project.

The <u>Standard Practices and Policies</u> section of the manual (section 8) contains company operating procedures directly or indirectly affecting the worker.

The <u>Process Data</u> section of the manual (section 9) contains the derivation and application of the process times used in this manual. See the index on page 9-1.

The <u>Data Synthesis and Back-Up</u> section of the manual (section 10) contains the detailed MOST calculation sheets. See the index on page 10-1.

	W M	CODE	
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	Section 3 Standards Application	PAGE 3-1	

This section of the manual contains the unit standard sumMaries and information pertaining to the applicability of these standards. Below is an index showing how this section is constructed.

INDEX

т	UNIT STANDARD SUMMRIES	Page
Τ.	A. Five Inch Gun Mount Facing B. Main Engine Pads Face Milling	3-2 3-3
	 c. Stem Tube Boring D. Waste Heat Boiler Installation E. Air Conditioning Plant Installation F. Chill Water Pump Installation G. High Pressure Air Dehydrator Installation H. Boat Handling Winch Installation I. Vaneaxial Fan Installation J. Sewage Pump Installation K. Bridge Crane and Rails Installation L. Convection Oven Installation M. Hoist and Monorail Installation N. Cooling Coil Installation 	3-5 3-6 3-7 3-8 3-9 3-10 3-11 3-12 3-13 3-14 3-15
II.	UNIT STANDARD APPLICATION ANALYSIS A. Applecability Analysis for Machining Operations B. Applicability Analysis for Equipment Installation C. Machining Units Descriptions D. Installed Equipment Descriptions	3-16 3-17 3-18 3-19

INGALLS Shipbuilding

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CODE

DATE 5/2/84

SIGN. FMW

FIVE INCH GUN MOUNT FACING

PAGE 3-2

TOTAL 1,399,922

UNIT STANDARD SUMMARY

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
2001.01	JOB Preparation	57,418	2.0	114,836
2001.02	Area Travel	52,124	2.0	104,248
2001.03	Set-Up Machine	2,840	2.0	5,680
2001.04	Final Position Machine	5,280	2.0	10,560
2001.05	Level Machine	13,37	0 2.0	26,740
2001.06	Remove Jack Tab	6,020	2.0	12,040
2001.07	Weld Machine in Place	19,540	2.0	39,080
2001.08	Operate Machine	388,397.	2.0	776,794
2001.09	Measure Progress & Verify Flatness	22,730	2.0	45,460
2001.10	Remove Machine	15,582	2.0	31,164
		Ç	SUBTOTAL 1	,166,602
		Ι	PFD @ 20%	233,320

TOTAL UNIT STANDARD
14.00 HRS.

$T^{\overline{}}$		CODE
INGALLS	WM - MANUAL	DATE 8/6/84
S hipbuilding		SIGN. FWM
	MAIN ENGINE PADS FACE MILLING	PAGE 3-3

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
2002.01	Job Preparation	58,598	2.0	117,196
2002.02	Area Travel	40,742	2.0	81,484
2002.02	Align Pads on Foundation	37,600	2.0	75,200,
2002.03	Weld pads in place	88,640	2.0	177,280
2002.01	Tack Weld Tabs	18,480	2.0	36,960
2002.05	Set-Up & Position Machine	73,810	2.0	147,620
2002.00	Level Machine & Set Taper	26,400	2.0	52,800
2002.07	Weld Machine in Place	112,080	2.0	224,160
2002.09	Install & Change Cutting Tools	18,290	2.0	36,580
2002.09	Daily Machine Care	6,840	2.0	13,680
2002.10	Operate Milling Machine	293,947	2.0	587,894
2002.11	Weld Support Frame in Place	123,720	2.0	247,440
2002.12	Check Taper & Flatness	41,600	2.0	83,200
2002.13	Remove Machine & Support Frame	184,480	2.0	368,960
2002.14	Kemove Machine & Support Frame		SUBTOTAL	2,250,454
			PFD @ 20	% 450,091
			TOTAL	2,700,545

TOTAL UNIT STANDARD

27.01 HRS.

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		CODE
INGALLS Shipbuilding	W M - M A N U A L	DATE 6/29/84
		SIGN. TLC
	STERN TUBE BORING	PAGE 3-4

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
2003.01	Job Preparation	44,361	2.2	97,594
2003.02	Area Travel	71,704	2.2	157,749
2003.03	Install Boring Equipment	397,512	2.0	795,024
2003.04	Operate Boring Bar	705,809	2.0	1,411,618
2003.05	Prepare Machine After Each Cut	537,734	2.0	1,075,468
2003.06	Remove Boring Equipment	74,992	2.0	149,984
			SUBTOTAL -	3,687,437
			PFD @ 20%	737,487
			TOTAL	4,424,924

TOTAL UNIT STANDARD
44.25 HRS.

INGALLS Sshipbuilding	WM - MANUAL	DATE	7/2/84
		SIGN.	TLC
	WASTE HEAT BOILER INSTALLATION	PAGE	3-5

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
3001.01	Job Preparation	58,598	2.0	117,196
3001.02	Layout Pads	37,560	1.0	37,560
3001.03	Burn Pads	109,980	1.0	109,980
3001.04	Grind Pads	48,790	1.0	48,790
3001.05	Area Travel	82,404	2.0	164,808
3001.06	Layout Pad Locations	9,630	1.0	9,630
3001.07	Remove Temporary Bolts	14,606	1.0	14,606
3001.08	Tack Pads to Boiler	39,560	2.0	79,120
3001.09	Locate Boiler	25,080	2.0	50,160
3001.10	Tack Weld Pads to Deck	21,430	1.0	21,430
3001.11	Burn Pad to Boiler Weld	66,440	1.0	66,440
3001.12	Layout, Drill & SPotface Holes	117,270	2.0	234,540
3001.13	Bolt-Up With Temporary Bolts	68,766	2.0	137,532
3001.14	Bolt-Up With Permanent Bolts	136,576	3.0	409,728
	-		SUBTOTAL 1 ,501,520 PFD @20% 300,304	
			TOTAL	1,801,824

I TOTAL UNIT STANDARD

18.02 HRS.

		CODE	CODE	
INGALLS	W M - MANUAL ~	DATE	5/15/84	
Shipbuilding		SIGN.	FWM	
	AIR CONDITIONING PLANT INSTALLATION	PAGE	3-6	

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	•	TOTAL STANDARD IN TMU'S
3002.01	Job Preparation	151,100	1.0	151,100
3002.02	Area Travel	64,364	1.0	64,364
3002.03	Layout & Drill Leg Stands	318,800	1.0	318,800
3002.04	Install Dummy Mounts & Leg Stands	105,496	1.0	105,496
3002.05	Check Snubber Alignment	101,664	1.0	101,664
3002.06	Install Permanent Leg Stand Bolts	121,818	1.0	121,818
3002.07	Install Resilient Mounts	61,052	1.0	61,052
3002.08	Install Snubber Cones & Liners	170,072	1.0	170,072
3002.09	Cut Out Shims	11,720	1.0	11,720
3002.10	Install Shims & Bolt Down Snubber Sockets	74,020	1.0	74,020
			SUBTOTAL 3	1,180,106
			PFD @ 20%	236,021
			TOTAL	1,416,127

TOTAL UNIT STANDARD

14.16 HRS.

				CODE	
INGALLS	WM	WM	- MANUAL	DATE	4/27/84
Shipbuilding				SIGN.	TLC
	CHILL	WATER PUMP	INSTALLATION	PAGE	3-7

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
3003.01	Job Preparation	27,467	1.0	27,467
3003.02	Area Travel	15,060.	1.0	15,060
3003.03	Remove Temporary Mounts	15,666	1.0	15,666
3003.04	Install Permanent Mounts	6,650	1.0	6,650
3003.05	Install Self-Locking Fasteners	18,228	1.0	18,228
			SUBTOTAL	83,071
			PFD @ 20%	16,614
			TOTAL	99,685

TOTAL UNIT STANDARD

1.00 HRS.

WM - MANUAL

DATE 4/19/84

SIGN. TLC

PAGE 3-8

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION

UNIT STANDARD SUMMARY

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARDS IN TMU'S
3004.01	Job Preparation	58,301	2.0	116,602
3004.02	Area Travel	60,304	2.0	120,608
3004.03	Preparation for Burning Pads	5,860	1.0	5,860
3004.04	Burning Pads	10,660	1.0	10,660
3004.05	Grind Pads	25,860	1.0	25,860
3004.06	Drill Pads	16,130	1.0	16,130
3004.07	Layout for Drilling of Foundation	3,340	1.0	3,340
3004.08	Drill Foundation	19,080	1.0	19,080
3004.09	Tack Weld Pads	11,150	1.0	11,150
3004.10	Measure and Cut Shim Stock	6,100	1.0	6,100
3004.11	Burning-Wash-Out Tack Weld	8,680	1.0	8,680
3004.12	Install Shims & File Pads	9,070	1.0	9,070
3004.13	Install and Remove Temporary Fasteners	14,794	1.0	14,794
3004.14	Final Welding of Pads	13,370	1.0	13,370
3004.15	Install Self-Locking Fasteners	7,710	1.0	7,710
			SUBTOTAL	389,014
			PFD @ 20%	77,802
			TOTAL	466,816

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<u> </u>	W M - M A N U A L	DATE 6/26/84	
Shipbuilding		SIGN. TLC	
	BOAT HANDLING WINCH INSTALLATION	PAGE 3-9	

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
3005.01	Job Preparation	42,001	2.0	84,002
3005.02	Area Travel	59,484	2.0	118,968
3005.03	Drill Pads	27,949	1.0	27,949
3005.04	Layout for Drilling Foundations	3,350	2.0	6,700
3005.05	Drill Foundation	29,329	1.0	29,329
3005.06	Install Temporary Bolts	16,578	1.0	16,578
3005.07	Weld Pads	37,555	1.0	37,555
3005.08	Install Fitted Bolts	55,996	1.0	55,995
3005.09	File Pads	246,052	1.0	245,052
3005.10	Remove Temporary Bolts	17,768	1.0	17,768
3005.11	Install Permanent Bolts	21,865	1.0	21,865
3333.11			SUBTOTAL	662,762
			PFD @ 20%	132,552
			TOTAL	795,314

TOTAL UNIT STANDARD
7.95 HRS.

		CODE
INGALLS	W M - M A N U A L	DATE 5/9/84
Shipbuilding		SIGN. TLC
	VANEAXIAL FAN INSTALLATION	PAGE 3-10

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
3006.01	Job Preparation	27,467	1.0	27,467
3006.02	Area Travel	12,570	1.0	12,570
3006.03	Remove Temporary Mounts	13,724	1.0	13,724
3006.04	Remove Covers and Brackets	23,418	1.0	23,418
3006.05	Install Covers and Brackets	22,828	1.0	22,828
3006.06	Install Resilient Mounts	10,240	1.0	10,240
3006.07	Belt Fan and Bracket Assembly to Resilient Mounts	6,954	1.0	6,954
			SUBTOTAL	117,201
			PFD @ 20%	23,440
			TOTAL	1,40,641

	TOTAL UNIT STANDARD	
	1.41 HRS.	I
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		CODE	
lngalls	WM - MANUAL	DATE	6/14/84
Shipbuilding		SIGN.	TLC
	SEWAGE PUMP INSTALLATION	PAGE	3-11

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
3007.01	Job Preparation	27,467	1.0	27,467
3007.02	Area Travel	14,160	1.0	74,160
3007.03	Remove Temporary Mounts	15,666	1.0	15,666
3007.04	Layout & Drill Holes In Foundation	36,704	1.0	36,704
3007.05	Install Permanent Mounts	6,650	1.0	.6,650
3007.06	Install Self-Locking Fasteners	18,228	1.0	18,228
			SUBTOTAL	118,875
			PFD @ 20%	23,775
			TOTAL	142,650

TOTAL UNIT STANDARD

1.43 HRS.

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PAGE 3-12

BRIDGE CRANE AND RAILS INSTALLATION

UNIT STANDARD SUMMARY

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
3008.01	Job Preparation	71,803	2.0	143,606
3008.02	Area Travel	37,000	2.0	74,000
3008.03	Layout Centerline	18,960	2.0	37,920
3008.04	Layout & Drill Beam	48,944	2.0	97,888
3008.05	Weld Guide Tabs in Place	10,930	2.0	21,860
3008.06	Position Rail, Layout & Measure	42,620	2.0	85,240
3008.07	Layout & Drill Rail	61,216	2.0	122,432
3008.08	Layout & Drill Pads	45,376	2.0	90,752
3008.09	Reposition Rail	87,894	2.0	175,788
3008.10	Position, Weld & Paint Pads	226,548	2.0	453,096
3008.11	Install Stops	84,700	2.0	169,400
3008.12	Install Bridge Crane	94,086	2.0	188,172
3008.13	Final Install Rail	65,280	2.0	130,560
			SUBTOTAL 1	,790,714
			PFD @ 20%_	358,143
			TOTAL 2	2,148,857

TOTAL UNIT STANDARD
21.49 HRS.

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PAGE 3-13

CONVECTION OVEN INSTALLATION

UNIT STANDARD SUMMARY

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
3009.01	Job Preparation	42,884	2.0	85,768
3009.02	Area Travel	18,960	2.0	37,920
3009.03	Layout & Drill Pads	27,024	1.0	27,024
3009.04	Tap & Check Pads	22,722	1.0	22,722
3009.05	Bolt Up Pads	9,250	1.0	9,250
3009.06	Weld Pads in Place	45,820	1.0	45,820
			SUBTOTAL	228,504
			PFD @ 20%	45,701
			TOTAL	274,205

TOTAL UNIT STANDARD

2.74 HRS.

			CODE	
ĮŅĢĄĻĻS	W M - M A N U A L	DATE	8/24/84	
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	HOIST AND MONORAIL INSTALLATION	PAGE	3-14	

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
3010.01	Job Preparation	69,743	2.0	139,486
3010.02	Area Travel	26,700	2.0	53,400
3010.03	Layout Centerline	7,650	2.0	15,320
3010.04	Layout & Drill Beam	19,952	2.0	39,904
3010.05	Bolt Pivot Blocks Temporary	35,268	2.0	70,536
3010.06	Weld Guide Tabs in Place	3,510	2.0	7,020
3010.07	Position Rail, Layout & Measure	11,280	2.0	22,560
3010.08	Layout & Drill Rail	22,512	2.0	45,024
3010.09	Layout & Drill Pads	17,536	2.0	35,072
3010.10	Bolt Pivot Blocks to Rail	34,540	2.0	69,080
3010.11	Reposition Rail	24,364	2.0	48,728
3010.12	Prepare & Weld Pads	39,210	2.0	78,420
3010.13	Install Hoist	35,932	2.0	71,864
3010.14	Final Install Rail	39,570	2.0	79,140
			SUBTOTAL	775,554
			PFD @ 20%	155,110
			TOTAL	330,664

		CODE
INGALLS	WM - MANUAL	DATE 8/9/84
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	COOLING COIL INSTALLATION	PAGE 3-15

OPERATION CODE	OPERATION DESCRIPTION	OPERATION STANDARD IN TMU'S	REQUIRED MANNING	TOTAL STANDARD IN TMU'S
3011.01	Job Preparation	71,223	1.0	71,223
3011.02	Area Travel	100,514	1.0	100,514
3011.03	Collect and Classify Legs	19,220	1.0	19,220
3011.04	Layout Holes	4,180	1.0	4,180
3011.05	Drill Holes	31,980	1.0	31,980
3011.06	Bolt-Up Legs	43,986	1.0	43,986
3011.00	- 5		SUBTOTAL	271,103
			PFD @ 20%	§ <u>54,220</u>
			TOTAL	325,323

	TOTAL UNIT STANDARI)
I	3.25 HRS.	I
		I

	·· ··	CODE
INGALLS	W M - M A N U A L	DATE 10/12/8ፊ
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	Section 3 Standards Application	PAGE 3-16

UNIT STANDARD APPLICABILITY ANALYSIS FOR MACHINING OPERATIONS

The unit standard summaries for maching (pages 3-2 through 34) include time to perform all of the necessary activities to completely machine these items aboard ship.

The unit standard summaries of machining operations contained in this manual do not allow for gantry crane delays, painting, rigging or avoidable delays.

These standards are devleoped at the 100% performance level using the basic MOST predetermined motion time system. To attain these standards a workman must be adapted to the work and have gained sufficient experience to enble him to perform his job with little or no supenision. The worker must also posses coordinated mental and physical qualities which enable him to proceed from one element to another without hesitation delay. The workman must maintain a high level of efficiency by his Knowledge and proper use of all tools and related equipment.

The explaintion of the theory behind the 20% personal, fatigue and unavoidable delay allowance can be found on pages 7-1 and 7-2.

		CODE
INGALLS	WM - MANUAL	DATE 10/12/84
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	Section 3 Standards Application	PAGE 3-17

UNIT STANDARD APPLICABILITY ANALYSIS FOR EQUIPMENT INSTALLATION

The unit standard summaries for equipment installation (pages 3-5 through 3-15) include the to perform all of the necessary activities to completely Install those itms aboard ship.

The unit standard summaries for equipment installation contained in this manual do no allow time for shop preparation work, connecting piping, ventilation ducting installation, foundation installation, rigging, painting, electrical hook-up or avoidable delays.

These standards are developed at the 100% performance level using the basic MOST predetermined motion time system. To attain these standards a worlanan must be adapted to the work and have gained sufficient experience to enable him to perform his job with little or no supervision. The worker must also possess coordinated mental and-physical qualities which enable him to proceed from one element to another without hestiation or delay. The workman must maintain a high level of efficiency by his knowledge and proper use of all tools and related equipment.

The explaination of the theory behind the 20% personal, fatigue and unavoidable delay allowance can be found on pages 7-1 and 7-2.

		CODE
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MACHINING UNITS DESCRIPTIONS

FIVE INCH GUN MOUNT

The five inch gun Mount is the structural support ring upon which the upper portion of a five inch gun rests. The dimensions of this unit can be found on page 9-47. For the shipboard location of this unit see the figures on page 5-4 and 5-5.

MAIN ENGINE PADS

The main engine pads are used with chocks to attain proper height and angular alignment between the ship's main engine and main shafting. The dimensions of these pads can be found on page 9-51. For the shipboard location of these pads see the figures on pages 5-4,5-6 and 5-7.

STERN TUBE

The stern tube is a water tight deck penetration that contains the main propellor shafting where it emerges from the ship. It consists of a hollow cast steel cylinder. The dimensions of the stern tube can be found on page 9-43. For the shipboard location of the stern tube see page 5-4and 5-11.

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	Section 3 Standards Application	PAGE 3-19

INSTALLED EQUIPMENT DESCRIPTIONS

WASTE HEAT BOILER

The waste heat boiler removes excess heat generated by the ship's service generators and converts this heat for use by the hot water heating and distilling systems. For shipboard location of this unit see the figures on pages 5-4,5-6, and 5-7.

General Information

Dimensions: 180 LX73''WX84"H

Weight: 18,000 Lbs. Installation Drawing: VLD 182017

AIR CONDITIONING PLANT

The air conditioning plant is the major component of the ships air conditioning system. It cools water it recieves. This water is then transferred throughout the ship to cooling coils. For the shipboard location of this unit see the figures on pages 5-4, 5-6, and 5-7.

General Information

Dimensions: 164" LX56''WX88" H

"Weight: 22,000 Lbs. Installation Drawing: VLD 185078

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	Section 3 Standards Application	PAGE 3-20

INSTALLED EQUIPMENT DESCRIPTIONS

CHIIL WATER PUMP

The chill water pump transfers cooled water revieved from the air conditioning plant to cooling coil units throughout the ship. For the shipboard location of this pump see the figures on pages 5-4, 5-6 and 5-7.

General Information

Dimensions: 53" L X 20" W X 33" H

Weight: 1,627 Lbs. Installation Drawing: VLD 185079

HIGHPRESSURE AIR DEHYDRATOR

The high pressure air dehydrator is a unit that works in the ship's main high pressure system to remove moisture. For the shipboard location of this unit see the figures on pages 5-4, 5-6, and 5-7.

General Information

Dimension: 27" L X 24" W X 42" H

Weight: 650 Lbs.
Installation Drawing: VLD 185096

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Section 3 Standards Application

INSTALLED EQUIPMENT DESCRIPTIONS

BOAT HANDLING WINCH

The boat handling winch is a hoisting machine which is used primarily to lower or lift personnel carrier boats to or from the water. board location of this unit see the figures on pages 5-4 and 5-10.

General Information

Dimensions: 44" LX 39" HX 56"W

Weight: 6,300 Lbs. Installation Drawing: GD 186078

VANMXIAL FAN

The vaneaxial Fan is a unit used in the ventilation system to circulate air. For the shipboard location of this unit see the figures on pages 5-4 and 5-8.

General Information

Dimensions: 19" Dia. X24" L

Weight: 220 Lbs.
Installation Drawing: VLD 185139

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Section 3 Standards Application

INSTALLED EQUIPMENT DESCRIPTION

SEWAGE PUMP

The sewage pump transfers sewage to a holding tank. For the shipboard location of this pump see the figures on pages 5-4 and 5-8.

General Information

Dimensions: 19" L X 28" W X 26" H

Weight: 652 Lbs . Installation Drawing: VLD 185633

BRIDGE CRANE AND RAILS

The bridge crane, located in the helicopter hanger, transports loads in support of helicopter maintenance. For the shipboard location of this unit see the figures on pages 5-4, 5-12, and 5-13.

General Information

Dimensions: 2 ton hoist mounted on a beam, 8'7"LX5"WX8"H

spanning a pair of rails 32' LX 5" WX 8" H Installation Drawing: GD 186058

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Section 3 Standards Application

INSTALLED EQUIPMENT DESCRIPTIONS

CONVECTION OVEN

The convection oven is used in the galley for the preparation of food. The convection oven operates differently than the conventional free heat flowing oven. The convection oven forces the heat to circulate by the use of a fan. For the shipboard location of this unit see the figures on pages 5-4, 5-12, and 5-13.

General Information

Dimensions: 44" L X 38" W X 40" H

Installation Drawing: GD 651004

HOIST AND MONORAIL

The hoist and monorail located in the helicopter hanger transports loads in support of helicopter maintenance. For the shipboard location of this unit see the figures on pages 5-4, 5-12, and 5-13.

General Information

Dimensions: 1 1/2 ton hoist mounted on a rail 28' LX5"WX8"H

Installation Drawing: GD 186058

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Section 3 Standards Application

INSTALLED EQUIPMENT DESCRIPTIONS

COOLING COIL

A cooling coil is a ventilation system unit which is supplied with chilled water from the air conditioning plant. When the chilled water passes through this coil it cools the air immediately surrounding the coil. This chilled air is then circulated by the use of a fan. For the shipboard location of this unit see the figures on pages 5-4 and 5-9.

General Information

Dimensions: 47" LX18"WX6"H

Weight: 125 Lbs.
Installation Drawing: VLD 185200

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SECTION 6 - FACILITIES AND EQUIPMENT

AIR CONDITIONING PLANT INSTALLATION MACHINIST TOOLS REQUIRED

- 1. 8 ft. Steel Tape
- 2. 6 in. Steel Scale (Rigid)
- 3. Hammer
- 4. Center Punch
- 5. Hole Punch
- 6. Ratchet (1/2 in. Drive)
- 7. Sockets (7/8 in. & 1-1/2 in.)
- 8. Slugging Wrenches (1-5/16 in. & 2-1/4 in.)
- 9. "Y" Wrench (Custom Snubber Cone Fitting)
- 10. Portable Magnetic Base Drill
- 11. Drill Bits (1/8 in., 25/32 in. & 29/32 in.)
- 12. Scriber
- 13. Shears (to cut shim stock)
- 14. Feeler Gage
- 15. Allen Wrench (1/2 in.)
- 16. 6 in. Dykes
- 17. Marking Chalk
- 18. Hydraulic Jack

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OPERATION TITLE: JOB PREPARATION

JOB PREPARATION FORMULA APPLICABILITY

The values in this formula include time to receive instructions from supervisor, read bill of material, read and secure drawing, get and put away tools, and secure tools and parts from tool crib and warehouse.

The values are for one person per shift. These values do not include any travel time or any PFD allowance.

To use the job preparation formula, standards have to be extracted from one of the three major categories.

- Initial Job Preparation Operations
 - Additional Job Preparation Operations
- Sub-Operation Activities

The initial job preparation chart gives time values for jobs of varying degrees of complexity (simple-average-complex). Initial job preparation is for the first day a job begins.

The additional job preparation chart also gives time values for jobs of varying degress of complexity. Additional job preparation is for the second and succeeding days of a job where less job preparation is generally required.

The sub-operation activities are operations which may be used to meet unique situations.

All detail data development of these operations may be found in section 10, Data Synthesis and Back-Up.

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OPERATION TITLE: JOB PREPARATION

INITIAL JOB PREPARATION CODE 1001.10

CLASSIFICATION	TMU'S	APPLICATION	CODE
Simple	12050	Includes; receive instructions (3 Mins.) Read B.O.M./Simple Sketch/Get & Put away tools/Read and Sign time card.	1001.11
Average	42001	Includes; Simple Job Preparation, and additional <i>time for</i> receiving instructions (5 mins.), additional time for securing tools from tool crib, and reading an average drawing.	1001.12
Complex	65559	Includes average Job Preparation and additional time for receiving instructions (10 reins), secure parts from the warehouse and reading a complex drawing.	1001.13

NuE: The values for initial job preparation are for one (1) person per shift on the first day of the job. These values do not include any travel time **to** or from any location. For time values for travel see the area travel operation chart (code 1002.00). No PFD allowance has been added to these values.

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OPERATION TITLE : JOB PREPARATION

ADDITIONAL JOB PREPARATION CODE 1001.20

CLASSIFICATION	TMU's	APPLICATION	
Simple	1180	Secure toos from too box and Put- up tools/read sign time card.	1001.21
Average	16597	Includes simple job preparation plus securing tools from tool crib.	1001.22
Complex	53152	Includes average job preparation plus securing additional materials from warehouse, also securing and reading an additional complex drawing.	1001.23

NOTE: The values for additional job preparation are for one (1) person per shift on second and succeeding days of job. These values do not include any travel to or from any location. For time **values** for travel see the area travel operation chart (code 1002.00). No PFD allowance has been added to these values.

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OPERATION TITLE: JOB PREPARATION

Below is a complete listing of Job Preparation Operations and Sub-Operations:

OPERATIONS:

DESCRIPTION	CODE	TMUS
Simple Initial Job Preparation	1001.11	12050
Average Initial Job Preparation	1001.12	42001
Complex Initial Job Preparation	1001.13	65559
Simple Additional Job Preparation	1001.21	1180
Average Additional Job Preparation	1001.22	16597
Complex Additional Job Preparation	1001.23	53152
SUB-OPERATIONS : DESCRIPTION	_CODE	TMu <u>s</u>
Get tools from tool box or put tools in tool box	1001.111	440
Secure tools from tool crib	1001.121	15417
Additional time for reading average drawing	1001.122	1.1200
Additional time for reading complex drawing	1001.131	3780
Secure parts from warehouse	1001.132	11445
Secure Material requisition form from Production Control	1001.1321	3042

All detail data, development of these operations may be found in Section 10,Data Synthesis and Back-Up under the appropriate code no.

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OPERATION TITLE: AREA TRAVEL

AREA TRAVEL FORMULA DATA TABLE APPLICABILITY

The values in these formulas include the time to walk one way distances to frequently visited areas of the shipyard by outside machinists.

These values do not include any PFD allowances.

Values are for a single person.

To use the area travel formula data table, standards have to be extracted from the following categories:

- o From Tool Boxes To Work Area
- o From Ship To Support Area

Both the from tool boxes - to work area" and "from ship - to support area" charts show the starting location for the travel in the "from" column. The "to" column shows the location of the destination of the travel. This chart shows one way distance, the time value in TMU's, and the code number which relates to the travel route taken. The ship locations designated on these charts extend from the steps of the module on ground level to,or from,various areas of the shipyard. To arrive at specific areas on the ship, the additional time to get to those areas will have to be added into any complete item study.

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OPERATION TITLE: JOB PREPARATION

ADDITIONAL JOB PREPARATION CODE 1001.20

CLASSIFICATION	TMU's	APPLICATION	CODE
Simple	1180	Secure tools from tool box and Put- up tools/read sign time card.	1001.21
Average	16597	Includes simple job preparation plus securing tools from tool crib.	1001.22
Complex	53152	Includes average job preparation plus securing additional materials from warehouse, also securing and reading an additional complex drawing.	1001.23

NOTE: The values for additional job preparation are for one (1) person per shift on second and succeeding days of job. These values do not include any travel to or from any location. For time values for travel see the area travel operation chart (code 1002.00).

No PFD allowance has been added to these values.

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OPERATION TITLE: AREA TRAVEL

FROM: TOOL BOXES

TO: WORK AREA

FROM	TO	DISTANCE ONE WAY	TMU's	CODE
7) Pre Integration Employee Tool Box	12) Module 1 Stairs	38 ft.	240	1002.11
7) Pre Integration Employee Tool Box	13) Module 2 Stairs	438 ft.	3300	1002.12
7) Pre Integration Employee Tool Box	14) Module 3 Stairs	375 ft.	2700	1002.13
7) Pre Integration Employee Tool Box	15) Module 4 Stairs (ladder)	875 ft.	6042	1002.14
7) Pre Float-Off Employee Tool Box	22) Stairs to Elev. on integrated ship	225 ft.	1520	1002.15
7) Pre Float-Off & Pre Integration Employee Tool Box	2) Tool Room Wetdock Bldg	1638 Ft.	11311	1002.16
7) Pre Float-Off & Pre Integration Employee Tool Box	16) Free Stock	263 ft.	1960	1002.17
7) Module 2 Stairs	17) AMR #1	*	2270	1002.18
7) Module 2 Stairs	18) Assy 102 Ladder	400 ft.	3000	1002.19

 ${\hbox{{\tt NOTES:}}}$ Values are for one person. No. PFD allowance is included in these values.

^{*}See Section 10 for details.

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OPERATION TITLE: AREA TRAVEL

FROM: SHIP

TO: SUPPORT AREA

FROM	TO	DISTANCE ONE WAY	TMU 'S	CODE
12 Module 1 Stairs	8 Tool Rm Bay 3	525 ft.	3627	1002.201
12 "	9 Repro Track 2	188 ft.	1310	1002.202
12 "	5 Supv. Office Trk 1	388 ft.	2450	1002.203
12 "	2 Tool Room Wet Dock Bldg	1375 ft.	9494	1002.204
12 "	10 Production Control	638 ft.	4406	1002.205
12 "	21 Warehouse 301	2600 ft.	17952	1002.206
13'module 2 Stairs	8 Tool Room Bay 3	156 ft.	1130	1002.207
13 "	9 Repro Track 2	388 ft.	2700	1002.208
13 "	5 Supv. Office Track 1	875 ft.	6040	1002.209
13 "	2 Tool Room Wet Dock Bldg	1775 ft.	12256	1002.210
13 1,	10 Production Control	1050 ft.	7250	1002.211
13 "	21 Warehouse 301	2838 ft.	19595	1002.212

NOTES: Values for one person. No PFD allowance is included in these values.

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OPERATION TITLE: AREA TRAVEL

FROM: SHIP

TO: SUPPORT AREA

(continued)

FROM	ТО	DISTANCE ONE WAY	TMU 's	CODE
14 Module 3	8 Tool Room Bay 3	75 ft.	540	1002.213
14 "	9 Repro Track 2	575 ft.	3970	1002.214
14 "	5 Supv. Office Trk 1	775 ft.	5353	1002.215
14 "	2 Tool Room Wet Dock Bldg	1688 ft.	11656	1002.216
14 "	10 Production Control Office	975 ft.	6732	1002.217
14 "	21 Warehouse 301	2938 ft.	20285	1002.218
15 Module 4	4 Repro wet Dock Area	938 ft.	6478	1002.220
15 "	5 Supv Office Trk 1	613 ft.	4234	1002.221
15 "	2 Tool Room Wet Dock Bldg	750 ft.	5175	1002.222
15 "	20 Prod. Control Office	400 ft.	3000	1002.223
15 "	21 301 Warehouse	2338 ft.	16144	1002.224

 $\underline{\mathtt{NOTES}}$: Values are for one person. No PFD allowance is included in these

values.

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OPERATION TITLE: AREA TRAVEL

FROM: SHIP

TO: SUPPORT AREA (continued)

FROM	TO	DISTANCE ONE WAY	TMU'S	CODE
22 Integrated Ship	8 Tool Room Bay 3	675 ft.	4663	1002.225
2 2 "	9 Repro Track 2	500 ft.	3455	1002.226
2 2 "	5 Supv Office Track 1	375 ft.	2700	1002.227
2 2 "	2 Tool Room Wet Dock Bldg	1219 ft.	8418	1002.228
2 2 "	11 Production" Control Office	363 ft.	2700	1002.229
2 2 "	21 Warehouse 301	2475 ft.	17087	1002.230
3 Ship in Wet Dock Area	4 Repro Wet Dock Area	325 ft.	2450	1002.231
3 "	1 Supv Office Wet Dock Bldg	275 ft.	1960	1002.232
3 "	20 Prod. Control Office Wetdock Bldg.	338 ft.	2450	1002.233
3 "	2 Tool Room Wet Dock Bldg	400 ft.	3000	1002.234
3 "	21 Warehouse 301	1813 ft.	12517	1002.235

 ${\hbox{{\tt NOTES}}}$: Values are for one person. No PFD allowance is included in these values.

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OPERATION TITLE : LAYOUT FOR DRILLING

LAYOUT FOR DRILLING FORMULA APPLICABILITY

The values in this formula include time to layout holes for drilling with or without a template. Manufacture template values include time to fabricate a template..

To use the layout for drilling formula table, standards have to be extracted based on the following type of layouts:

- . Without Template
- . With Template
- . Manufacture Template

The "without template" category includes measuring the necessary dimensions to locate a hole, center punching the hole and marking that hole for future reference.

The "with template" category includes using a manufactured template, placing the template in position, center punching the hole and marking that hole for future reference. The "with template" category also includes the use of an equipment's base as a template.

The "manufacture template" includes the time to manufacture a template using template paper.

NOTE: Values do not include travel or bending motions between hole locations.

No PFD allowance is included. Values are for 1 person.

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OPERATION TITLE : LAYOUT FOR DRILLING

LAYOUT FOR DRILLING FORMULA DATA TABLE

LAYOUT	STANDARD IN TMU'S	CODE
WITHOUT TEMPLATE	1390 (Per Hole)	1003.10
WITH TEMPLATE	323 (Per Hole)]003.20
MANUFACTURE TEMPLATE	1236 (Per Hole)	1003.30

NOTE: No PFD allowance included. Values are for 1 person.

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OPERATION TITLE: DRILLING

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DRILLING FORMULA APPLICABILITY

The values in this formula include time to set-up an electric hand drill or a magnetic base drill. The application of these standards is on a per hole, per job, or as required basis as noted.

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OPERATION TITLE: DRILLING

DRILLING FORMULA DATA

OPERATION DESCRIPTION	SUB-OPERATIONS	TMU 'S	CODE
SET-UP WITH	Position Drill (per hole)	740	1004.11
MAGNETIC BASE DRILL	Use Safety Chain (per hole)	940	1004.12
	Plug in Extension Cord (per job)	2960"	1004.13
	Change Drill Bit (per job or as req'd)	2400	1004.14
	Hand Feed Drill Bit To and From Work Piece (per hole)	530	1004.15
SET-UP WITH ELECTRIC	Plug in Extension Cord (per job)	2960	1004.13
HAND DRILL	Change Drill Bit (per job or as req'd)	2400	1004.14
	Hand Feed Drill Bit to and From Work Piece (per hole)	110	1004.21
PROCESS TIME	Process time is determined by depth, material, brinell hardness, and diameter of the hole drilled	See Process Time charts for appro- priate value	See page 9-24

NOTE: No PFD allowance included. Values are for one person.

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OPERATION: BOLT-UP

BOLT-UP FORMULA APPLICABILITY

The values in this formula include time to install a bolt in a non-threaded hole and assemble up to two washers and one nut to hold machinery.

The operations covered in this formula can be performed in all areas of the shipyard, shops and shipboard.

The tools involved include the use of two fixed wrenches or a fixed wrench and ratchet.

To use the Bolt-Up Formula data table, standards have to be extracted from the category section. Three major categories exist:

- . Set-Up
- . Position Bolt
- . Turn Bolt

The set-up category differentiates between two fixed wrenches and a fixed wrench and ratchet. The standards are applied on a per job basis and includes removing the tools and materials from a tool bag at the work sight and putting materials and tools back in tool bag when the job is complete. The position bolt category includes placement of the bolt with washer in the hole and use of a hammer for tight holes. The standards are applied on aper bolt basis. This standard can be used for the removal of bolts. The turn bolt category differentiates between the use of a ratchet or fixed wrench and between plain nuts and bolts and elastic stop nuts and bolts. The charts mentioned under the standards column are identified by the Code Number which identifies its location in the data sythesis section

A major portion of this analysis is based on the assembly of bolts. However, this is expanded to include the removal of belts. Removing a bolt can be less or more than the assembly. In some cases, a bolt can be loosened and "run out" rather easily. In other cases the loosening can involve considerable time, or the "run out" can be difficult. Therefore, for all practical purposes, the assembly and removal of bolts is set-up as one classification.

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OPERATION TITLE: BOLT-UP

BOLT-UP FORMULA DATA TABLE

OPERATION DESCRIPTION	CATEGORY		CODE	TMU's	
INSTALL BOLOT TO NON-		FIXED WRENCH (Apply Per Job)		1005.01	860
	SET-UP	RATCHET (Apply Per Job)		1005.02	970
THREADED HOLE AND ASSEMBLE NUT AND	POSITION BOLT (Apply Per Bolt)			1005.03	410
WASHER	TURN BOLT	RATCHET & FIXED WRENCH (APPlY Per Bolt)	PLAIN NUTS & BOLTS	1 005•04	See Page 6-18
			ELASTI- STOP NUTS & BOLTS	1005.05	See Page 6-19
		TWO FIXED	PLAIN NUTS & BOLTS	1005.06	See Page 6-20
		WRENCHES (Apply Per Bolt)	ELASTI- STOP NUTS & BOLTS	1005.07	See Page 6-21

NOTE: NO PFD ALLOWANCE INCLUDED. Values are for 1 person.

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OPERATION TITLE: BOLT-UP

Turn Bolt with ratchet for plain nuts and bolts

BOLT DIAMETER IN INCHES	STD IN TMUs
1/8	160
1/4	3 2 0
1/2	559
5/8	708
3/4	838
7/8	 987
	1117
1 1/2	1676

NOTES: No PFD Allowance included. Values are for one person.

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OPERATION TITLE: BOLT-UP

Turn bolt with ratchet for elasti-stop nuts and bolts

DOT III	1
BOLT DIAMETER	STD. IN
IN INCHES	TMU's
1/8	240
1/4	420
1/2	810
5/8	1026
3/4	1215
7/8	1431
1	1620
1 1/2	2430

NOTES: No PFD Allowance included. Values are for one person.

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OPERATION TITLE: BOLT-UP

Turn bolt with fixed wrench for plain nuts and bolts

BOLT DIAMETER	STD. IN
IN INCHES	TMU'S
1/8	740
1/4	540
1/2	953
5 /8	1207
3/4	1429
7/8	1688
1	1906
1/2	2859

NOTES: No PFD Allowance included. Values are for one person.

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OPERATION TITLE: BOLT-UP

Turn bolt with fixed wrench for elasti-stop nuts and bolts

up to two washers and one nut to hold

ed in this formula can be performed in shipboard.

lude the use of two fixed wrenches or

rmula data table, standards have to be ee major categories exist:

p ion Bolt Bolt

1 / 2 4860

NOTES: No PFD Allowance included. Values are for one person.

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SECTION 5 LAYOUTS AND MATERIAL FLOW

It Layouts and Material Flow" shows the overall sectional layout for each item as installed on board ship. Also, it details the typical process sequences to machine or to install pieces of equipment.

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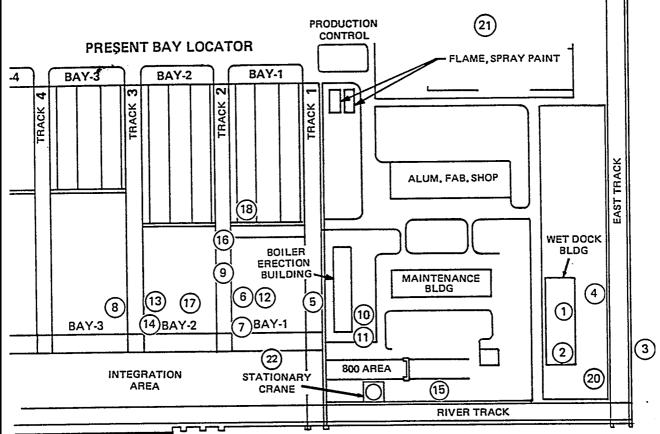
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SECTION 5 LAYOUTS AND MATERIAL FLOW

PAGE 5-3



LAUNCH PONTOON AREA

1. WET DOCK MACHINERY SUPERVISORY OFFICE

- 2. WET DOCK TOOL ROOM
- 3. STAIRS TO MAIN DECK INWETDOCK AREA
- 4. REPROGRAPHIC SERVICES IN WET DOCK AREA
- 5. PRE-INTEGRATION SUPERVISION OFFICE
- 6. PRE-FLOAT-OFF
 SUPERVISION OFFICE
- 7. PRE-FLOAT-OFF & PRE-INTEGRATION EMPLOYEE TOOL BOXES
- 8. BAY 3 TOOL ROOM
- 9. REPROGRAPHICS SERVICES BAY 2
- 10. PRODUCTION CONTROL PRE-INTEGRATION
- 11. PRODUCTION CONTROL PRE-FLOAT-OFF

*12. STAIR TO MODULE 1 IN PRE-INTEGRATION AREA

- 1 13. STAIR TO MODULE 2 IN PRE-INTEGRATION AREA
- 1 14. STAIR TO MODULE3 IN PRE-INTEGRATION AREA
- 15. LADDER TO MODULE 4 IN PRE4NTEGRATION AREA
- 16. FREE STOCK IN PRE-FLOAT-OFF AREA
- 17. AMR NO. 1
- 18. ASSY. 102
- 19. NOT USED
- 20. PRODUCTION CONTROL POST FLOAT-OFF
- 21. 301 WAREHOUSE
- *22. STAIRS TO ELEVATOR FOR INTEGRATED SHIP

1 (MAJOR WORKPLACE)

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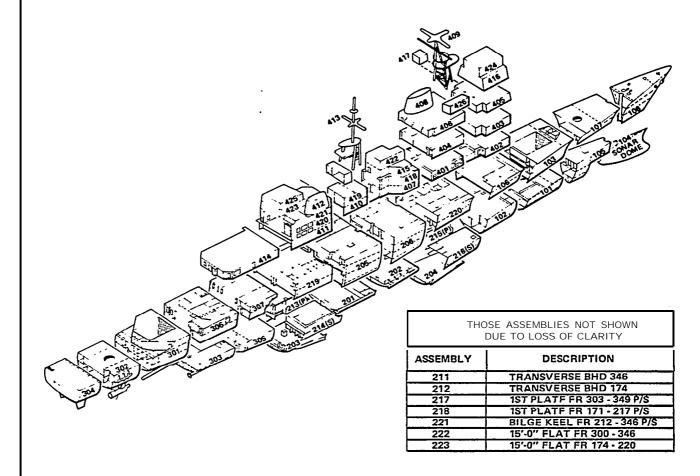
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SECTION 5.LAYOUTS AND MATERIAL FLOW

CG 47 CLASS SHIP EQUIPMENT LOCATOR



EQUIPMENT DESCRIPTION

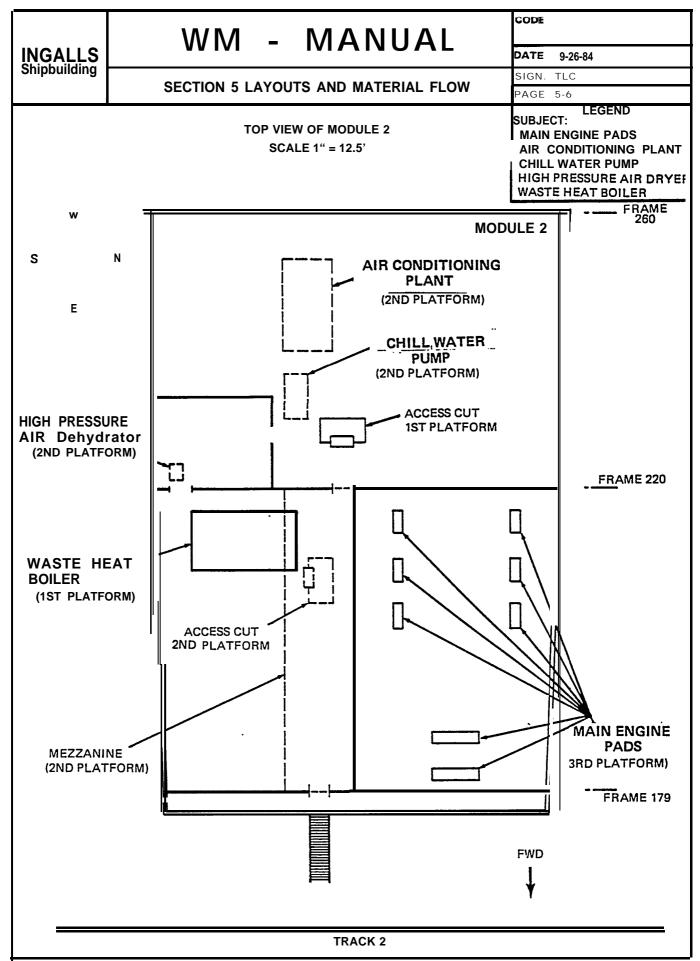
CONVECTION OVEN
BRIDGE CRANE AND RAILS
HOIST AND MONORAIL
STERN TUBE
BOAT HANDLING WINCH
COOLING COIL
VANEAXIAL FAN
SEWAGE PUMP
FIVE INCH GUN MOUNT
WASTE HEAT BOILER
A. C. PLANT
CHILL WATER PUMP
H.P. AIR DEHYDRATOR
MAIN ENGINE PADS

EQUIPMENT LOCATION

ASSEMBLY 205, MAIN DECK
ASSEMBLY 421,03 LEVEL
ASSEMBLY 421,03 LEVEL
ASSEMBLY 303, STARBOARD - INTERBOTTOM
ASSEMBLY 419, PORT -02 LEVEL
ASSEMBLY 306, PORT - MAIN DECK
ASSEMBLY 102, 2ND PLATFORM
ASSEMBLY 102, 3RD PLATFORM
ASSEMBLY 107,01 LEVEL
ASSEMBLY 216, 1ST PLATFORM
ASSEMBLY 206, 2ND PLATFORM
ASSEMBLY 206, 2ND PLATFORM
ASSEMBLY 206, 2ND PLATFORM
ASSEMBLY 204, 3RD PLATFORM
ASSEMBLY 204, 3RD PLATFORM

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INGALLS Shipbuilding	OFOTION S LAVOUTO AND MATERIAL ELOW	SIGN. TLC
	SECTION 5 LAYOUTS AND MATERIAL FLOW	PAGE 5-5s
	TOP VIEW OF O1 LEVEL FORWARD - WEATHER DECK	LEGEND
		SCALE: 1" = 12.5' SUJECT: FORWARD FIVE INCH GUN MOUNT
IN	ITEGRATION AREA	R 28
ENV		'R 54
	E-INCH MOUNT FORM	FR 94

t



HIG AIR

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SECTION 5 LAYOUTS AND MATERIAL FLOW

PAGE 5-7

SIDE VIEW OF MODULE 2

SCALE: 1" = 12.5"

SUBJECT MAIN ENG. PAD: H.P. AIR DRYER, CHILL WATER PUMP, A.C. PLANT WASTE HEAT BOILER

ACCESS CUT

WASTE HEAT **BOILER**

CHILL WATER PUMP ""

C. Inboard Area Layouts

MAIN DECK

1. Top View of 01 level - Forward Weather Deck

5-5

a. Five Inch Gun

1ST PLATFORM

2. Top View of Module 2

5-6

2ND PLATFORM

b. A. C. Plant

c. Chill Water Pump

a. Waste Heat Boiler

3RD PLATFORM

d. H. P. Air Dehydrator

INTER BOTTOM

Main Praina Dada

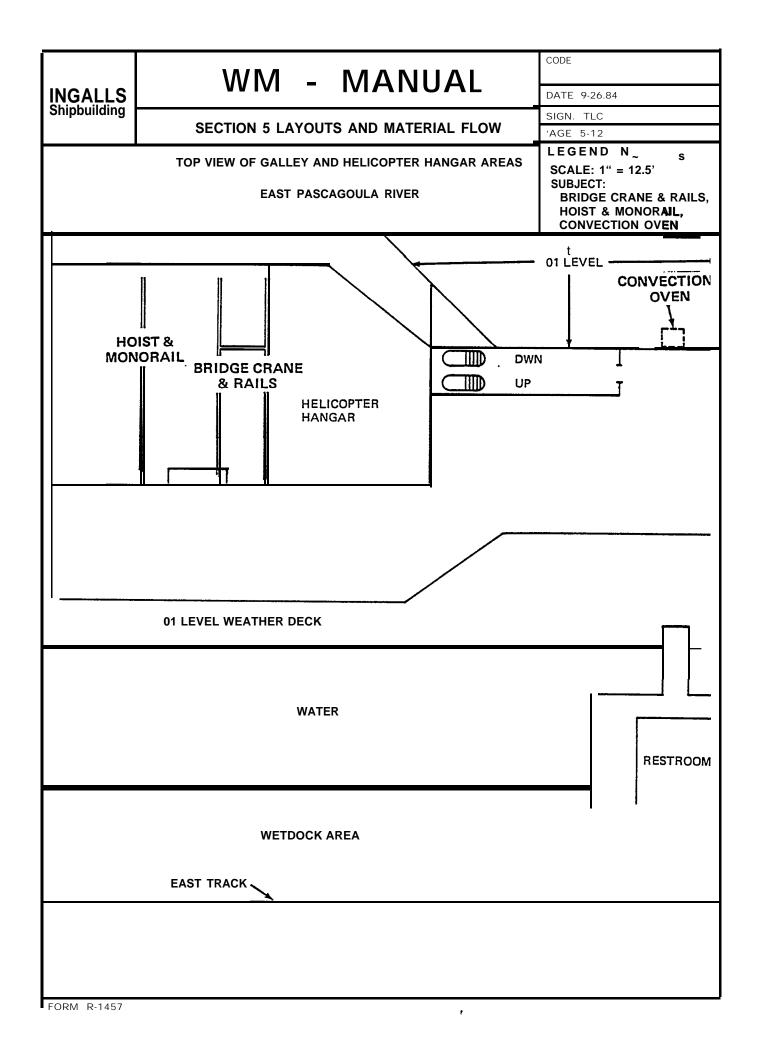
MODULE 2 FRAME 174, LOOKING AFT

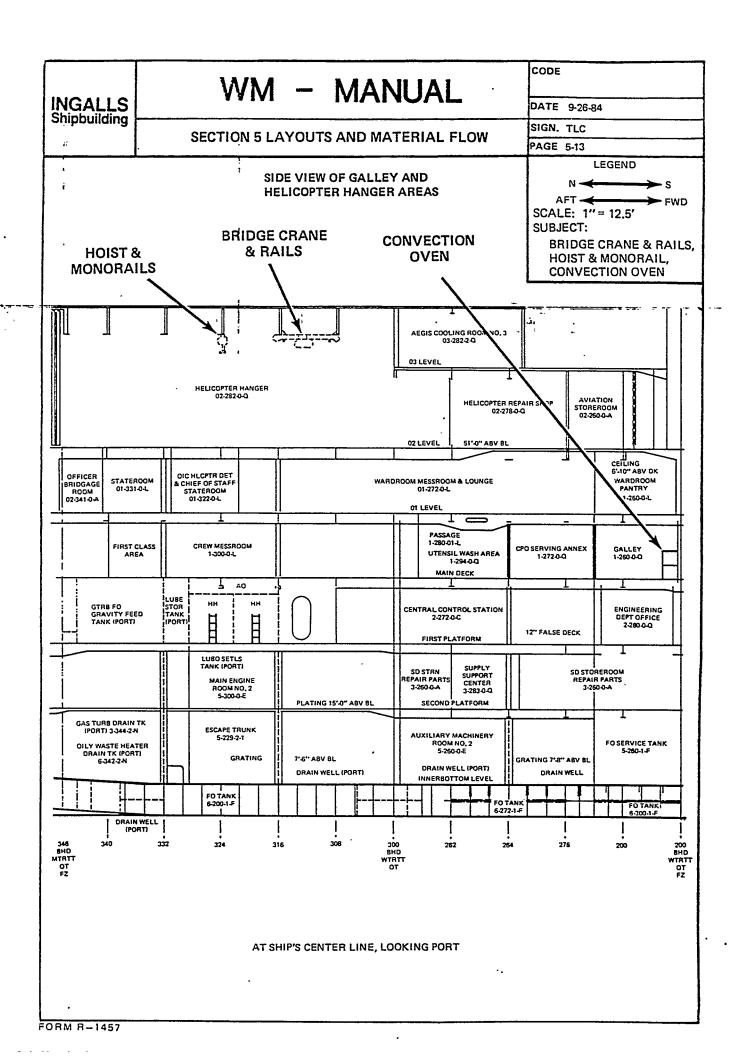
CODE WM - MANUAL ÞΕ INGALLS NGALLS . . SIGN. TLC **SECTION 5 LAYOUTS AND MATERIAL FLOW** PAGE 8-8 **LEGEND TOP VIEW OF ASSEMBLY 102** S -NATER PUMP, A.C. PLANT. WASTE **SEWAGE PUMP VANEAXIAL** FAN WASTE 2ND PLATFORM HEAT CHILL WATER :ss BOILER PUMP **SEWAGE PUMP** FR 146 **3RD PLATFORM ACCESS** CUT **2ND PLATFORM** LADDER FR 162 - ACCESS CUT MAIN ENGINE **PADS LADDER** 2ND PLATFORM **TO GROUND** TRACK 2 BAY 2

INGALLS Shipbuilding	WM - MAI	NUAL DATE 9-26-64
Shipbuilding	SECTION 5 LAYOUTS AND MATE	FRIAL FLOW
		'AGE 5-9
	TOP VIEW OF ASSEMBLY 3	
ВА	1	N S W SCALE: 1" = 12.5' SUBJECT: COOLING COIL
	TRACK 2	
	<u>.</u>	PALLET WITH COOLING COIL LEGS
	ASSEMBLY 306	FR 420 COOLING COIL ON LOCATION
		TORPEDO ROOM NO. 2
	LADDER	
FORM R-	AY 2 4 5 7	

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	SEC	CTION 5 LAYOUTS	S AND MATERIAL FLO)W	PAGE 5-10
					LEGEND
		TOP VIEW OF AS	SEMBLY 419		N w E +
					s
					SCALE: 1" = 12.5'
	BAY 2		TRACK 2	BAY 1	SUBJECT: BOAT HANDLING WINCH
				<u> </u>	
		1	LADDE	 =p	
		!	1		
		1			
		!			
		!			
		!			
BOAT PLATFORM	26' PERSONNE BOAT	L INTEG	RATION AREA (PORT	 SIDE)	
			1		
	_		<u> </u>		
		BOAT HANDLI	NG	_	
HELICOPTER HANGAR				PASSAGE	E
			5446		
FI	I R 300	F	FR 276		FR 244

INGALLS	w m	- MANUAL	DATE 9-26-				
INGALLS Shipbuilding	SECTION 5 LA	SIGN. TLC PAGE 5-11					
	UNDERS	SIDE VIEW OF ASSEMBLY 303	W - E SCALE 1" = 12.5' SUBJECT: STERN TUBE				
	E	AST – WEST GANTRY TRACK					
	LADDER 15 STEPS	INTEGRATION (STERN)	AREA (PORT SIDE)				
	SCAFFOLDING						
		LADDER 7 STEPS	FAN ROOM				
			(ST13D SIDE) STERN TUBE				
	FR 434	414 406 3	98 390 374				





INGALLS Shipbuilding	WM - MANUAL SECTION 5 LAYOUTS AND MATERIAL FLOW UNDERSIDE VIEW OF ASSEMBLY 303	SCALE 1	1 LEGENI " = 12.5'	→ E	
	ACTIVITY I I DELAY STORA		. SIER	N TUBI	
	I ADDER IS STEPS (STERN)	A (POR	T SIDE)		
	SCAFFOI DING				
	LADDER 7 STEPS BENCH STER	(S)	80 310	-	

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SECTION 5 LAYOUTS AND MATERIAL FLOW

PROCESS FLOW CHART

ACTIVITY_	EQUIPM	ENT	INSTALLATION	OPERATION	0
_		(TYF	PICAL)	 INSPECTION	
CHART BE	EGINS	IN	I WAREHOUSE	 TRANSPORT	
CHART EN	NDS		ON SHIP	DELAY	U
				STORAGE	\vee

DESCRIPTION SYMBO					OL	
1	Stored in Warehouse	0		\Box	D)	7
2	Transport to Machinery Assembly Shop (Truck)	0		*	D	∇
3	Inspect	0	1	\Diamond	D	∇
4	Prepare for Installation (As Necessary)		رات	⇧	D	\triangleright
5	Transport to Material Holding Area (Truck)	0		ŕ		\triangleright
- 6	Wait for Crane	0		⇧		\triangleright
7	Transport on Board (Crane)	0		\blacksquare	D	abla
8	Wait for Machinist and Rigger	0		⇧	A	\triangleright
9	Position Unit (Chain fall)	0		*	D	abla
10	Temporary Bolt	•		Φ	D	∇
11	Take Sizes Liners/Chocks	•		⇧	D	\triangleright
12	Unbolt	•		⇧	D	abla
13	Remove Unit (ChainFall)	0		*	\bigcirc	∇
14	Place Liners/Chocks	•		⇧	D	∇
15	Reposition Unit (Chainfall)	0		*	D	∇
16	Temporary Bolt	•		Φ	D	∇
17	Wait for Welder	0		(4)	≯	∇
18	Weld	•	0		D	∇
19	Unbolt	•	멧	⇧		∇
20	Wait for Painter	0		lφ	7	∇
21	Paint	•				∇
22	Permanent Bolt-Up	•		⇧	Δ	∇
23	Inspect Installation	0		Û	D	∇
		0		Û	D	\triangle

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SECTION 5- FACILITIES AND EQUIPMENT

IPAGE PAGE 6 - 1

ESS

	TITLE	PAGE
I	PORTABLE MACHINE SPECIFICATIONS A) Milling Machine B) Boring Machine C) Magnetic Base Drill Press	6-2 6-3 6-4
II.	TOOLS	
	A) Outside Machinist Personal Tool List B) Tool Lists	6-5 6-6

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SECTION 6 - FACILITIES AND EQUIPMENT

PORTABLE MILLING MACHINE BY MASTER MANUFACTURING COMPANY MODEL RPTM-6 SPECIFICATIONS :

Machining Head Power - 5 H.P.

Vertical Feed - 10 inches of travel

Transverse Feed - 14 inches of travel @ 1-11/16 to 16-3/8 IPM

Longitudinal Feed - 122 inches of travel @ 4-40 IPM

Weight - 4380 lbs.

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PAGE

SECTION 6- FACILITIES AND EQUIPMENT

PORTABLE BORING MACHINE BY MULTIPLE BORING MACHINE COMPANY

SPECIFICATIONS :

BAR DIAMETER - 4 inches

BAR LENGTH - 8 feet

SPEED -o to 10 PRM

FEED RATE - 0.1 to 0.2 inches per minute

WEIGHT - 1150 lbs.

(Boring Bar Only)

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PAGE

SECTION 6- FACILITIES AND EQUIPMENT

PORTABLE MAGNETIC DRILL PRESS BY BLACK AND DECKER MODEL 741

SPECIFICATIONS :

DRILLING CAPACITY - Up to 1-1/4 inch diameter

REAMING CAPACITY - Up to 1 inch diameter

TAPPING CAPACITY - Up to 1 inch diameter

NO LOAD SPEED - 250 & 500 RPM

RATED LOAD SPEED - 175 & 315 RPM

DRILL LENGTH STROKES - 15 inches

WEIGHT - 101 lbs.

HEIGHT - 31 inches

LENGTH - 18-7/8 inches

WIDTH - 4-13/16 inches

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SECTION 6 - FACILITIES AND EQUIPMENT

OUTSIDE MACHINIST PERSONAL TOOL LIST

First Year - Tools required by 2nd pay period upon reporting to work:

Tool Box

Ball Pein Hammer - 12 oz.

8' - Steel Tape

10" Channel Lock Pliers

12" crescent Wrench

Screw Drivers - Assorted Sizes (straight & phillips)

6" Steel Scale (rigid)

Center Punch

Scriber (with magnet)

Second Year - Tools required at start of 2000 work hours.

6" dykes

6" Crescent Wrench

1/2" Drive 12 point Socket set - 7/16" to 1-1/4"

Hacksaw Frame 10" Vise Grips

Alleri Wrench set - 1/16" to 3/8"

Feeler Gauges - .001 to .032

Third Year Tools required at start of 4000 work hours.

Wrench set Open End & Box End 3/8" to 1-1/4"

6" Needle Nose Pliers

4" & 8" Inside Calipers

4" & 6" Outside Calipers

3/8" Drive set (optional)

6" & 12" Dividers

Machinist Combination Square

Torpedo Level

It is understood that the apprentice may periodically purchase tools not listed above in order to perform his duty.

A First Class Machinist should have all of the above tools upon entry into the shipyard.

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SECTION 6- FACILITIES AND EQUIPMENT

TOOL LISTS FOR SPECIFIC JOBS

	JOB DESCRIPTION	PAGE
2001.00	Five Inch Gun Mount Facing	6-7
2002.00	Nain Engine Pad Face Milling	5-8
2003.00	Stern Tube Boring	6-9
3001.00	Waste Heat Boiler Installation	6-10
3002.00	Air Conditioning Plant Installation	6-11
3003.00	Chill Water Pump Installation	6-12
3004.00	High Pressure Air Dehydrator Installation	6-13
3005.00	Boat Handling Winch Installation	6-14
3006.00	Vaneaxial Fan Installation	5-15
3007.00	Sewage Pump Installation	6-16
3008.00	Bridge Crane and Rails Installation	6-17
3009.00	Convection Oven Installation	5-18
3010.00	Hoist and Monorail Installation	5-19
3011.00	Cooling Coil Installation	5-20

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SECTION 6 - FACILITIES AND EQUIPMENT

FIVE INCH GUN MOUNT FACING MACHINIST TOOLS REQUIRED

- 1. 8 ft. Steel Tape
- 2. 6 in. Steel **Scale** (Rigid)
- 3. Hammer
- 4. Center Punch
- !5. Ratchet (1/2 in. Drive)
- 6. Socket (1 in.)
- 7. Slugging Wrench (1-1/2 in.)
- 8. Allen Wrench (1/4 in.)
- 9. Feeler Gage
- 10. Carbide Cutting Tool

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SECTION 6 - FACILITIES AND EQUIPMENT

MAIN ENGINE PADS FACE MILLING MACHINIST TOOLS REQUIRED

- 1. 8 ft. Steel Tape
- 2. 6 in. Steel Scale
- 3. Hammer
- 4. Center Punch
- 5. Ratchet (1/2 in. Drive)
- 6. Socket (3/4 in.)
- 7. Allen Wrench (]/4 in.)
- 8. Chalkline
- 9. Taper level
- 10. Carbide Single Point Cutting Tools
- 11. 10 ft. Straight Edge
- 12. Hydraulic Jack

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SECTION 6 - FACILITIES AND EQUIPMENT

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STERN TUBE BORING MACHINIST TOOLS REQUIRED

- 1. Ratchet (1/2 in. Drive)
- 2. Socket Set (7/16 in. to 1-1/4 in.)
- 3. Fixed End Wrench Set (3/8 in. to 1-1/4 in.)
- 4. Hammer
- 5. File
- 6. Allen Wrench Set (1/16 in. to 3/8 in.)
- 7. 6 in. Steel Scale (Rigid)
- 8. Screw Driver (Flat)
- 9. ID Micrometer
- 10. Portable Surface Grinder
- 11. Chip Puller Rake
- 12. Feeler Gage
- 13. Carbide Cutting Tools

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SECTION 6 - FACILITIES AND EQUIPMENT

WASTE HEAT BOILER INSTALATION
MACHINIST TOOLS REQUIRED

- 1. 8 ft. Steel Tape
- 2. Hammer
- 3. Center Punch
- 4. Scriber
- 5. Drill Bit (1-5/16 in.)
- 6. Drill Bit (25/32 in.)
- 7. Drill Bit (17/64 in.)
- 8. Portable Magnetic Base Drill
- 9. Fly Cutter Tool
- 10. Feeler Gage
- 11. Fixed End Wrenches (1-7/8 in.)
- 12. Hydraulic Jack

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PAGE

SECTION 6 - FACILITIES AND EQUIPMENT

AIR CONDITIONING PLANT INSTALLATION MACHINIST TOOLS REQUIRED

- 1. 8 ft. Steel Tape
- 2. 6 in. Steel Scale (Rigid)
- 3. Hammer
- 4. Center Punch
- 5. Hole Punch
- 6. Ratchet (1/2 in. Drive)
- 7. Sockets (7/8 in. & 1-1/2 in.)
- 8. Slugging Wrenches (1-5/16 in. & 2-1/4 in.)
- 9. "Y" Wrench (Custom Snubber Cone Fitting)
- 10. Portable Magnetic Base Drill
- 11. Drill Bits (1/8 in., 25/32 in. & 29/32 in.)
- 12. Scriber
- 13. Shears (to cut shim stock)
- 14. Feeler Gage
- 15. Allen Wrench (1/2 in.)
- 16. 6 in. Dykes
- 17. Marking Chalk
- 18. Hydraulic Jack

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SECTION 6 - FACILITIES AND EQUIPMENT

CHILL WATER PUMP INSTALLATION
MACHINIST TOOLS REQUIRED

- 1. Socket (1-1/8 in. & 13/16 in.)
- 2. Ratchet (1/2 in. Drive)
- 3. Fixed End Wrenches (1-1/8 in. & 13/16 in.)

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SECTION 6 - FACILITIES AND EQUIPMENT

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION MACHINIST TOOL REQUIRED

- 1. 8 ft. Steel Tape
- 2. 6 in. Steel Scale (Rigid)
- 3. Hammer
- 4. Center Punch
- 5. Ratchet (1/2 in. Drive)
- 6. Socket (1-1/8 in.)
- 7. Fixed End Wrench (1-1/8 in.)
- 8. Portable Magnetic Base Drill
- 9. Feeler Gage
- 10. Scriber
- II. Drill Bits (1/8 in. & 25/32 in.)
- 12. File (for filing chocks)

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SECTION 6 - FACILITIES AND EQUIPMENT

BOAT HANDLING WINCH INSTALLATION MACHINIST TOOLS REQUIRED

- 1. 6 in. Steel Scale (Rigid)
- 2. Drill Bits (]7/32 in. & 25/32 in.)
- Hammer
- 4. Center Punch
- 5. Portable Magnetic Base Drill
- 6. Scriber
- 7. File (for filing chocks)
- 8. c-clamp
- 9. Ratchet (1/2 in. Drive)
- 10. Socket (1-1/4 in.)
- 11. Fixed End Wrench (1-1/4 in.)
- 12. Reamers (Various sizes 3/4 in. to 1 in.)
- 13. Feeler Gage
- 14. Level



VANEAXIAL FAN INSTALLATION MACHINIST TOOLS REQUIRED

```
2. Ratchet (1/2 in. Drive)
2. Sockets (13/16 in. & 3/4 in.)
3. Fixed End Wrenches (13/16 in. & 3/4 in.)
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SECTION 6 - FACILITIES AND EQUIPMENT

SEWAGE PUMP INSTALLATION MACHINIST TOOLS REQUIRED

- 1. Ratchet (1/2 in. Drive)
- 2. Sockets (13/16 in. & 1-1/8 in.)
- 3. Fixed End Wrenches (13/16 in. & 1-1/8 in.)
- 4. Portable Magnetic Base Drill
- 5. Drill Bits (21/32 in., 25/32 in. & 17/64 in.)

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SECTION 6 - FACILITIES AND EQUIPMENT

BRIDGE CRANE AND RAILS INSTALLATION MACHINIST TOOLS REQUIRED

- 1. 8 ft. Steel Tape
- 2. 6 in. Steel Scale
- 3. Hammer
- 4. Center Punch
- 5. Ratchet (1/2 in. Drive)
- 6. Sockets (]5/16 in., 7/16 in. & 3/4 in.)
- 7. Portable Electric Hand Drill
- 8. Drill Bits (1/8 in., 17/64 in., 21/32 in., & 25/32 in.) scriber
- 10. Allen Wrenches (3/8 in. & 5/16 in")
- 11. Chalkline

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SECTION 6 - FACILITIES AND EQUIPMENT

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CONVECTION OVEN MACHINIST TOOLS REQUIRED

- 1. 8 ft. Steel Tape
- 2. 6 in. Steel Scale (Rigid)
- 3. Hammer
- 4. Center Punch
- 5. Ratchet (1/2 in. Drive)
- 6. Socket (3/4 in.)
- 7. Drill bits (1/8 in. & 9/16 in.)
- 8. Taps (for 1/2-13 UNC 2A)

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SECTION 6 - FACILITIES AND EQUIPMENT

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HOIST AND MONORAIL INSTALLATION MACHINIST TOOLS REQUIRED

- 1. 8 ft. Steel Tape
- 2. 6 in. Steel Scale
- 3. Hammer
- 4. Center Punch
- 5. Ratchet (1/2 in. Drive)
- 6. Socket (3/4 in.)
- 7. Portable Electric Hand Drill
- 8. Drill Bits (1/8 in. &]7/32 in.)
- 9. Scriber
- 10. Allen Wrench (5/16 in.)
- 11. Chalkline

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	OPERATION TITLE: JOB PREPARATION	PAGE

COOLING COIL INSTALLATION MACHINIST TOOLS REQUIRED

- 1. Hammer
- 2. Center Punch
- 3. Scriber
- 4. Drill Bits (13/64 in. & 19/32 in.)
- 5. 3/4 in. Socket
- 6. Ratchet (1/2 in. Drive)

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SECTION 7: ALLOWANCES

PERSONAL FATIGUE AND DELAY FACTOR

The PFD (Personal, Fatigue and Delay) Factor for Outside Machinery Shipboard items is twenty percent (20%). The development of this factor is as follows:

ALLOWANCE	VALUE (%)
Personal Delays Basic Fatigue	· 5
Additional Fatigue: Noise Level (Intermittent -Loud) Unavoidable Delays Avoidable Delays	2 9 0
Total	20%

The preceding percentages were developed using information from the following sources:

- o Handbook of Industrial Engineering, pages 4.4.18 thru 4.4.22, copyright 1982.
- O The experience of Ingalls Shipbuilding Industrial Engineering Staff.

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SECTION 7: ALLOWANCES

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The definitions of these delay allowances are as follows:

• PERSONAL DELAY -

The time required for an employee to take care of all personal needs such as trips to drinking fountain and rest room.

o BASIC FATIGUE -

A reduction in the employee's capacity to perform work. The basic fatigue factor (4%) includes those influences that are common to all types of work.

o ADDITIONAL FATIGUE -

A reduction in the employee's capacity to perform work caused by factors such as use of muscularforce, poor lighting, atmospheric conditions, noise level, mental strain and monotony.

O UNAVOIDABLE DELAY -

This delay includes legitimate interruptions in the work cycle caused by other employees, material irregularities, and machine interference.

o AVOIDABLE DELAY -

This delay includes interruptions which are not allowed and can be controlled by good supervision. Examples of this delay would include visiting with other employees for personal reasons, smoking, eating a sandwich, reading non-work related material, etc.

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SECT. 8 STANDARD PRACTICIES AND POLICIES

8.01 CARE OF EQUIPMENT

The operator assigned to the particular work station is responsible for the lubrication, minor maintenance, and cleanliness of the equipment at the work station and for the cleanliness of the area in and around the work station.

8.02 OUALITY ASSURANCE AND INSPECTION

1. <u>General Responsibilities</u>

- A. The Vice President of Quality Assurance is responsible for the development and maintenance of a Quality Assurance Program responsive to the requirements of each contract. The Quality Assurance Program requirements as defined by the Quality Assurance organization will be incorporated into company policies, standard procedures, drawings and technical specifications, as appropriate, by each organization responsible for deliverable end items.
- B. The Quality Assurance organization is responsible for assuring quality requirements are invoked on suppliers as well as on Ingalls organizations producing an end item, for measuring the effectiveness of the Quality Assurance Program, and for assuring appropriate corrective action is taken by the organization responsible for departure from quality requirements.
- c. Each member of management is responsible to accomplish work in accordance with governing contractual drawings and specifications, approved technical specifications, drawing and other Ingalls documents issued for material and equipment acquisition, to define a process, or test a deliverable product.

2. Specific Responsibilities

Inspectors - Qualified personnel who have been selected and authorized to perform inspection tasks. This is a term used throughout all Quality Assurance (QA) procedures and Quality Work Instructions (QWI's) to include personnel who have been assigned either limited or full inspection responsibility. This includes inspectors within, or designated inspectors outside the QA organization. The use of the term "inspector" is to be construed to mean "within the authority and responsibility authorized by the Vice President, Quality Assurance".

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8.02 QUALITY ASSURANCE AND INSPECTION (Continued)

Surveillance Inspectors

Quality Assurance inspectors or personnel within the QA organization who are authorized to perform specified inspection functions are:

a. Quality Assurance Inspectors	(QAI)
b. Quality Engineering & Systems Personnel	(QE&S)
c. Quality Assurance Receipt Inspectors	(QARI)
d. Quality Assurance Supplier Control Field	d (QFR)
Representative	
e. Quality Assurance Preventive Maintenance	(QAPMS)

Responsibilities - Building adequate quality into the product is the primary responsibility of craft supervision. It is the responsibility of Quality Assurance and the designated inspection agencies.to inspect early in the process and at critical points to assure that the process is under control and that the product at the various stages meets quality and technical workmanship established by drawings, Manufacturing Standard Processes, as well as those requirements verified to be in accordance with the practices and instructions embodied in applicable QWI's, Standard Procedures (SP's) and Departmental Operating Instructions (DOI's).

Determination of the level of quality required to meet contractual requirements is the responsibility of QA. QAI has the responsibility for the application of the quality requirements embodied in the drawings, MSP's and QWI's to the product. The resolution of problems arising from instances of the customer applying a higher level of quality than that required by QA shall be through the Material Review System; specifically, the resolution of such problems has been delegated to Quality Assurance (Quality Engineering and System). The inspection process shall be audited, system data shall be analyzed for trends and recurring quality problems shall be investigated. Corrective action commitments shall be obtained by QE&S.

<u>Inspection</u> - The task performed by an authorized inspector to the requirements of the governing Ingalls drawings defining the product, its assembly or its installation, and to Manufacturing Standard Processes (MSP's) of the current issue, utilizing the applicable Quality Work Instructions (QWI) for the specific discipline or type of inspection. The scope of the inspection shall be defined-by the governing work authorization, supplemented as necessary by the releasing craft or (Production Control) to define the boundaries or extent of the work released for inspection.

8.02 QUALITY ASSURANCE AND INSPECTION (Continued)

<u>In-Process Inspection</u> - Inspections which are performed during the manufacturing cycle mefforts to prevent defects from being built into the final product, and to inspect those attributes which will be inaccessible at final inspection. In-process inspections will be conducted by Quality Assurance Inspection (QAI) on a continuing basis, documented on the IR, prepared as an Inprocess Inspection Report (IPIR).

Completion Inspection (or Installation Inspection) - Inspection for completion of all work required by applicable bill to the requirements of the current governing drawings and/or MSP's, using the applicable QWI. This is the only inspection which will be documented on the IR prepared as an Installation Inspection Report (IIR). The boundaries of the inspection will be defined in the Remarks Section of the described IIR. In those cases such as hull installation, where the craft requests a partial completion inspection in order to permit other crafts to proceed in the area, the boundaries are to be documented on the Craft Systems Release (CSR) form by the craft supervisor and initialed by the Boat Foreman or the Ship Superinten-It is to be noted that the work on any specific work authorization may include "assist" craft as well as the lead craft. QAI inspector for the lead discipline is responsible for assuring that an inspection is made to the "assist" craft attributes. All of the inspections shall be documented on the one IIR.

Nonconformances - When nonconformances are detected, the inspector initiates and Nonconformance Report (NCR) to document a complete description of the nonconformance, including its location and probable cause, except for those deficiencies considered to be anomalies. For CG 47 Class Ships, additional reporting procedures for processing Test Problem Reports (TPR's) are required.

8.03 MATERIAL "HANDLING AND REQUISITIONING

Planned Material

A planned material requirement is material that is specified by Eningeering drawing and identified to a planned group bill in the Technical Information Data Base (TIDB).

Warehouse Requisition forms for selected material, are computer generated from the Warehouse Requisition System, when material for specific group bills is requested.

Other material, identified on planned group bills, but not coded for computer generation, is requisitioned by Material Support using a manually prepared Material Requisition form.

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DATE 1/18/84

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OPERATION TITLE: AREA TRAVEL

FROM: SHIP

TO: SUPPORT AREA

		DECEMBER 1		
FROM	TO	DISTANCE ONE WAY	TMU's	CODE
12 Module 1 Stairs	8 Tool Rm Bay 3	525 ft.	3627	1002.201
12 "	9 Repro Track 2	188 ft.	1310	1002.202
12 "	5 Supv. Office Trk 1	388 ft.	2450	1002.203
12 "	2 Tool Room Wet Dock Bldg	1375 ft.	9494	1002.204
12 "	10 Production Control	638 ft.	4406	1002.205
12 "	21 Warehouse 301	2600 ft.	17952	1002.206
13 'Module 2 Stairs	8 Tool Room Bay 3	156 ft.	1130	1002.207
13 "	9 Repro Track 2	388 ft.	2700	1002.208
13 "	5 Supv. Office Track 1	875 ft.	6040	1002.209
13 "	2 Tool Room Wet Dock Bldg	1775 ft.	12256	1002.210
13 "	10 Production Control	1050 ft.	7250	1002.211
13 "	21 Warehouse 301	2838 ft.	19595	1002.212

NOTES: Values for one person. No PFD allowance is included in these values

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SECT. 8 STANDARD PRACTICES AND POLICIES

8.07 TIME AND PRODUCTION REPORTING

The supervisor fills out a daily time card for each employee charging the appropriate number of hours to the hull, account, and berth number.

8.08 SET-UP AND TEAR DOWN

Set-up and tear down of a machine is the responsibility of the operator assigned to the work station. After each use the machine is restored to its original condition.

8.09 SUPERVISORY RESPONSIBILITY

To plan, organize, and supervise the activities of workmen on surface ships in accordance with established policies, procedures, practices, agreements between Company and represented employees.

To assign craftsmen to perform the preplanned and scheduled work according to drawings and specifications, satisfying the requirements of allowed work standards, acceptance tests, quality standards of workmanship, scheduled completion dates, and budgeted manpower allotments.

To be the primary liason between the Company and the represented employees, communicating the Company objectives to the workers, and keeping the Company informed of general attitudes of employees.

8.10 OUTSIDE MACHINIST DUTIES AND RESPONSIBILITIES

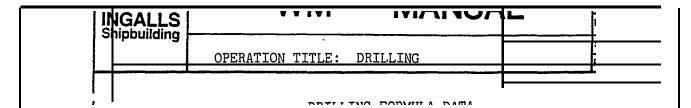
I. OCCUPATIONAL SUMMARY:

Performs the installation, alignment and repair of machinery aboard ship.

II. DUTIES AND RESPONSIBILITIES:

Works from drawings, various technical manuals and engineering documents in accordance with recognized and accepted trade practices.

Uses all standard tools such as machinist hand tools and precision measuring devices such as micrometers, dial indicators and calipers.



8.10 OUTSIDE MACHINIST DUTIES AND RESPONSIBILITIES (Continued)

Installs according to specification; auxiliary machinery, main propulsion equipment, ordnance, elevators, conveyors, mast antennas, windows, signal devices, boilers, and related equipment, shop machinery, galley equipment, laundry equipment, vent fans, coolers, pumps, motors, compressors, distillers, generators, sea valves, reach rods, refrigeration units and air conditioning units, stern tubes, rudders, and propellers. Also operates portable milling and boring machines.

Installs various deck machinery such as windlasses, capstans, winches and boat handling gear.

Mounts electronic consoles and various electrical control panels.

Assists in various operational tests on installed machinery and equipment.

The duties described herein cover major duties required. However, this does not exclude the requirement of performing related and other duties as directed by supervision.

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SECTION 9: PROCESS DATA

Included in this section is the detail information for the derivation of the process times for machining operations used in this manual. Below is an index showing how this section is constructed.

INDEX

SEC	CTION	PAGE
1.	DRILLING PROCESS TIME	
	A) How To Determine Drilling Process Time B) Material and Condition Code Description Matrix C) Drilling Process Time Charts D) Drilling Process Time Formula Derivation E) Drilling Process Time Computer Program	9-2 9-3 9-24 9-39 9-40
2.	STERN TUBE BORING PROCESS TIME	
	A) Boring Process Time Calculations B) Boring Process Time Formula Derivation	9-42 9-45
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	A) Facing Process Time Calculations B) Facing Process Time Formula Derivation	9-46 9-49
4.	MAIN ENGINE PADS FACE MILLING PROCESS TIME	
	A) Face Milling Process Time Calculations B) Face Milling Process Time Formula Derivation	9-50 9-53

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9-2

SECTION 9: PROCESS DATA

DRILLING PROCESS TIME

How to use this section to determine process times.

In order to use this section of the manual to determine drilling process times, a three step procedure must be followed.

- o First, the material and condition code must be determined for the material which is being drilled. This is done by following the procedure outlined on page 9-3.
- Ž Second, the process time (for drilling a one inch deep hole) at the given hole diameter for the appropriate material and condition code can be determined from the process time charts pages 9-25 through 9-38.
- O Third, the process time for the appropriate hole depth (including lead time) must be determined by the procedure outlined on page 9-24.

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PAGE 5-1

SECTION 5 LAYOUTS AND MATERIAL FLOW

MATERIAL AND CONDITION CODE DESCRIPTION MATRIX

This section shows the four digit material and condition code (pages 9-4 thru 9-23). It also describes the material in terms of the AISI (American Iron and Steel Institute) number or other material designation, the Brinell hardness, and a description of the processing the material has undergone (ex. quenching, annealing, cold drawing, hot rolling etc.)

Considerable time and attention has been given to the problem of finding commercial equivalent materials to specific military specification (Mil-spec) numbers. After researching this problem extensively and collaborating with a metallurgist at the National Bureau of Standards it was determined that three characteristics of a material could be used to select the material and condition code from a mil-spec. The systematic method of selection is as follows:

- o The first step is to determine the major class of the material (ex. Plain Carbon Steel, Alloy Steel, Aluminum, Copper etc.).
- O The second step is to determine the carbon content for steels only. (Note the last two digits of an AISI number denote the carbon content. For example: 1010 steel has .1% carbon content).
- O The third step is to determine the Brinell hardness which is affected by the processing method (Quenching, Annealing, Cold Rolling etc. Note: If only the tensile strength is known, then the Brinell hardness can be approximated for steels by dividing the tensile strength in psi by 500.

The determination of these values will point to a specific material and condition code.

MOTE: The material and condition code description matrix was taken from "Machining Data Handbook", Metcut Research Associates Inc., (June 1966) p. 221-240.

		MAT	TERIAL AN DESCRI				DE		-				
MATERIAL AND	ĺ	II.	l				FEED	- Inches I	Per Revol	utien			II -
CONDITION CODE	MATERIAL	HARO . NESS	CONSTITUT	SPEED			MOMINAL HOLE DIAMETER - Inches						422 H22
	ANICATAC	BHN	Constitution	tpm	1/16	1/8	1/4	1/2	1/4	,	1-1/2	2	MATERI
0001	FREE MACHINING PLAIN CARBON STEELS Resulphurized	100 to 150	Hot Rolled or Annealed	40 115	.001	.003	.005	.010	.015	.018	.029	. 02c	M10 M7 M1
0002	81111 1119 81112 1212 81113 1213 1113 1213-Te	150 to 200	Cold Drawn	100 120	.001	.003	.005	.010	.015	.018	.020	.025	M10 M7 M1
0003	Resulphurized 1108 1120 1109 1125	100 to 150	Hot Rolled or Annealed	70 90	.001 -	.003	.005	.010	.015	.018	.020	.023	M10 M7 M1
0004	1115 1144 1117 1211 1118	150 to 200	Cold Drawn	70 90	.001	.003	.005	.010	.015	.018	.020	.025	M10 M7 M1
0005		175 to 225	Hot Rolled, Normalized, Annealed or Cold Drawn	70 90	.001	.003	.005	.010	.015	.018	.020	.023	М10 М7 М1
0006	Resulphurized 1132 1141 1137 1145	275 to 325	Quenched and Tempered	65	-	.002	.004	.006	.010	.012	.015	.018	M10 M7 M1
0007	1138 1145 1138 1151 1140	325 to 175	Quenched and Feinpered	40	-	.002	.003	.006	.008	.009	.010	.011	T15 M33
0008		375 to 125	Quenched and Tempered	30	-	.002	.003	.005	.007	.009	.010	.010	T15 M33
2009		to	Hot Rolled, Normalized, Annealed or Cold Drawn	80 105	- 100	.003	.005	.010	.015	.018	.020	.025	M10 M7 M1
0010	Leaded 1818 1213 18128 12114	150 to 200	liot Rolled, Normalized, Annealed or Cold Drawn	80 110		.003	.005	.010	.015	.018	.020	.025	M10 M7 M1
0011		200 to 250	Hot Rolled, Normalized, Annealed or Cold Drawn	60 75	.001	.003	.004	.007	.010	.012	.015	.018	M10 M7 M1

MATERIAL AND							FEED -	Inches P	r fevalu	t ren			
MATERIAL AND CONDITION CODE		XARS-		SPEEB			HOWINAL	HOLE BILL	ETER - I	oches			#55 1001
CONDITION CODE	MTERIAL	223H NMB	COMPITION	f pa	1/15	1/0	1/4	,1/2	3/4	1	1-1/2	2	MATERIAL
., 0012	PLAIN CARDON STEELS	85 to 125	Hot Rolled, Normalized, Annealed or Cold Drawn	70 90	.001	.003	.005	.010	.015	.018	.020	.025	M10 M7 M1
0013	1886 1816 1822 1888 1817 1823	125 to 175	Hot Rolled, Normalized, Annealed or Cold Drawn	65 80	.001	.003	.005	.1109	.012	.013	.018	.022	M10 M7 M1
0014	1889 1818 1824 1818 1815 1825 1812 1828 1828 1815 1821	175 to 225	Hot Rolled, Normalized, Annealed or Cold Drawn	60 70	.001	.002	.004	.007	.010	.012	.015	.018	M10 M7 M1
0015		225 to 275	Annealed or Cold Drawn	50	•	.002	.004	.006	.g10	.012	.015	. 01%	M10 M7 M1
0016 · .		125 to 175	Hot Rolied, Normalized, Annealed or Gold Drawn	65 811	.001	:003	.004	.010	.012	.013	.018	022	M10 817 321
0017	1827 1852 1838 1855	175 to 225	Hot Rolled, Normalized, Annealed or Cold Drawn	55 70	.001	.003	.004	.007	.010	.012	015	.018	M10 M7 M1
0018	1933 1968 1934 1962 1935 1964 1935 1965 1937 1966 1938 1978 1939 1974	225 to	Normalized, Normalized, Annealed, Cold Drawn or Quenched and Tempered	55	•	.002	.003	.006	.009	.010	.014	.016	M10 M7 M1
0019 ,	1848 1878 1041 1888 1842 1884 1843 1895 1845 1886 1845 1898	215	Hot Rolled, Normalized, Annealed or Quenched and Temperel	45	-	.002	.003	.005	400.	.003	.011	.013	M10 M7 M1
0020	1849 1895 1858	325 to 375	Quenched and Tempered	40	•	.002	.003	.006	.00%	.009	.010	.011	T 15 M 8 8
0021		375 to 425	Quenched and Tempered	30	•	.002	.003	.005	.007	.009	.010	.010	T15 M33
0022	FREE MACHINING ALLOY STEELS Resulphurized 3148 4150 4148 8640	150 to 200	Hot Rolled, Normalized, Annealed or Gold Drawn	65 80	.001	.003	.005	.009	.012	.013	.018	.022	M10 M7 M1

		ŀ		ı .			FFFB -	Inches Po	r Zevelu	t i ag			
MATERIAL AND		NTB8-		ļ				HOLE BIAL					X22
CONDITION CODE	MATERIAL	HESS BME	COMPLITION	SPEEB I pa	1/18	1/8	1/4	1/2	3/4	1	1-1/2	2	FOOL Material
0023	FREE WACHINING ALLOY STEELS (cont.)	200 to 250	Hot Rolled, Normalized, Annealed or Cold Drawn	60 75	-001	.003	.004	.007	.010	.012	.015	.018	M10 M7 M1
0024		275 to 325	Quenched and Tempered	50	-	.002	.003	.006	.009	.010	.014	.016	M10 M7 M1
0025	Resulphyrized 3148 4158 4148 8848	325 to 375	Quenched and Tempered	35	•	.002	.003	.006	.008	.009	.010	.011	T15 M33
0026		375 to 425	Quenched and Tempered	25		.002	.003	.005	.007	.009	.010	.010	T15 M33
0027		45R _c to 48R _c	Quenched and Tempered	20	•	.0005	.001	.002	.002	.003	.003	.004	T15 M33
0028		150 to 200	Hot Rolled, Normalized, Annealed or Cold Drawn	70 90	- 001	.003	.005	.010	.015	.018	.020	.025	М10 М7 М1
0029		200 to 250	Hot Rolled, Normalised, Annealed or Cold Drawn	65 80	-001	.003	.004	.007	.010	.012	.015	.018	M10 M7 M1
0030	Loaded 41130 51132 41140 86120	275 to 325	Quenched and Tempered	60	•	.002	.004	.006	.010	.012	.015	.018	M10 M7 M1
0031	41147 88148 41158 521188 43147	325 to 375	Quenched and Tempered	40	•	.002	.003	.006	.008	.009	.010	.011	T15 M33
0032		375 to 425	Quenched and Tempered	25	•	.002	.003	.005	.007	.009	.010	.010	T15 M33
0033		45R _C to 48R _C	and	20	•	.0005	.001	.002	.002	.003	.003	.004	T15 M33

		T	T				EEED	Inches 8	er Revolu				
MATERIAL AND		HARD.			<u> </u>				METER - 1				HZ2
CONDITION CODE	MATERIAL	223K NHB	COMPILION	SPFED (pm	:/16	1/5	1/4	1/2	3/4		1-1/2	2	TOOL MATERIAL
i	ALLOY STEELS	125	Hot Rolled,	60	.001								
0034		to	Annealed or	75	_	.003	.004	.007	.010	.012	.015	.013	M7
•		175	Gold Drawn				! }						M1
			 			 	<u> </u>	 -	 -		 	ļ	
		175	Hot Rolled,										М10
0035		to	Annealed or	65	-	.002	.004	.006	.010	.012	.015	.018	М7
	1370 4128 5120 2317 4317 5317	225	Gold Drawn				ļ :						MI
	2317 4317 6317 2512 4320 6325 2515 4608 8415	225	Hot Rolled,										
0036	2517 4615 8115 3115 4617 8615	to	Normalized, Annealed or	55	_	500.	.003	.005	i .008	.010	.012	.015	M7
	3120 4620 8617 3125 4621 8620	275	God Drawn									i	MI
	3310 4720 8522 3316 4815 8625	<u> </u>	Hot Rolled,										
0037	4012 4817 8627 4017 4820 8720	275 to	Normalized, Cold Drawn or										M10
0037	4023 5015 8022 4024 5028 9310	325	Quenched and	50	-	.002	.003	.005	.008	.009	.011	.013	M7
	4027 5024 9315 4028 5128 94815		Tempered										MI
	4118 G118 94817 4125	325	Normalized	1					İ				
0038	\	to	or Quenched	-10	-	.002	.003	.006	.008	.007	.010	.011	T15
· .		375	and Tempered							l			M33
		375	Quenched										
0039		to	and	30		.002	.003	.005	.007				
		425	Tempered	- 1	-	.002	.007	.005	.007	.009	.010	.010	T15 M33
											-		.
0040	1336 4337 5288	175	Hot Rolled, Normalized,			l	1	ŀ	I				MIO
0040	1332 4348 6278 1335 4648 8298	to 225	Annealed or	60	- j	.003	.004	.007	.010	.012	.015	.018	M7
	1348 58848 8342 1345 58844 8382	223	Cold Drawn				Ì	ļ	į				мі
ļ	2338 5848 6440 2335 5886 6475	225	Normalized,	\Box									
0041	2340 50850 81845	to	Oold Drawn or Quenched	50	_	.002	.00.	.006	.008	.vio	.012	.015	M10 M7
1	2345 58969 8830 3130 5875 8637	275	and Tempered		,		- 1						MI
	3135 5088 8648 3148 5138 8642			 -	+								
0042	3141 5137 8845 3145 5135 86845		Normalized		İ			1	l				MIO
0042	3150 5140 8650 4030 5145 8655	- 1	or Quenched	45	-	.002	.003	.005	.008	.009	.011	.013	М7
l	4032 5147 5668 4837 5150 8748		r cinper ed							_		İ	MI
2012	4842 5155 8742 4847 5168 9255	325	Normalized					T					
0043	4063 51868 9768 4138 56188 9767	to	or Quenched	35	-	.002	.003	.006	.008	.009	.010	.011	T15
ļ	4135 51188 94838 4137 52188 94848	375	and Tempered		1			1					М33
,	4148 6145 9445 4142 6158 9848	375	Ouenghad										
0044	4145 8180 9845 4147 6248 9858	to	Quenched and	25		.002	00.						
	4158 6258	425	Tempered		-		.003	.005	.007	.009	.010	.010	T15 M33
Ĺ	<u>-</u>			<u>: </u>									

		Γ		_	-	FEED -	Inches F	or Revol	utio		_	
MATERIAL AND		MARO				NOM -		METER - I				MSS
CONDITION CODE	MATERIAL	NESS	CONDITION	SPEED 1 pm			1/2	3/4	I	1-1/2	2	MSS TOOL Material
0045	ALLOT STEELS (cant.)	+5R, to 48R,	Quenched and Tempered	20			.002	.002	.003	.003	.004	T15 M33
0046	339 4347 8288 1335 4640 8218 1345 50840 6342 140 50840 6342	48R to 50R	Quenched and TemperEd	20			.002	.002	.003	.003	.004	T15 M33
0047	(SR PAGE 224 Tor COULTE MATERIAL ELST)	50R, to 52R,	Quenched and Tempered	15			.002	.002	.003	.003	.004	T15 M33
0048	NITRIBING STEELS Mitraliey 125M Mitraliey 1356	260 to 250	Annealed	50			.003	.008	.010	.011	.013	M10 M7 M1
0049	Nitralloy 135M Nitralloy M Nitralloy 230	300 to 350	Normalized or Quenched and Tempered	35			.006	.008	.009	.010	.011	T15 M33
0050	MIL-A-1260 (GRD)	250 to 320	Quenched and Tempered	25			.003	.005	.006	.007	.008	T15 M33
0051	ULTRA-HICH STRENGTH STEELS	200 to 250	Annealed	55			.005	.008	.010	.011	.013	M10 M7 M1
0052		250 to 300	Normalized	50			.006	.008	.009	.010	.011	M10 M7 M1
0053	05AC NX-2 4348	3R _c to 8R _c	Quenched and Tempered	20			.003	.003	.004	.005	.005	T15 M33
0054		8R _c to 0R _c	Quenched and Tempered	20		00	.002	.002	.003	.003	.004	F15 433
0055		OR _c to 2R _c	Quenched and Tcmpered	15			.002	.002	.803	.003	.004	T15 M33

MATERIAL AND		T	T	1			FEED	Inches I	er Bevol	ıl ton			, ,
		HARD-	i					HOLE DIA					- I
CONDITION CODE	MATERIAL	NESS MHB	COMBITION	SPEED I pa	1/18	1/6	1/4	1/2	3/4	1	1-1/2	2	TOOL WATERIAL
.•• 0056	ULTRA-MICH STRENGTM STEELS (cont.)	200 to 250	Annealed	50	-	.002	.003	.005	.008	.010	.011	.013	M10 M7 M1
0057		250 to 300	Normalized	45	•	.002	.003	.006	.008	.009	.010	.011	M10 M7 M1
0058	N11 N13	43R _c to 48R _c	Quenched and Tempered	20	•	.001	.002	.003	.003	.004	.005	.005	T15 M33
0059		48Rc to 50Rc	Quenched and Tempered	15	•	.0005	.001	.002	.002	.003	.003	.004	T15 M33
0060 · .		50R _c to 52R _c	Quenched and Tempered	10	-	.0005	.001	.002	.002	.003	.003	.004	T15 M33
0061	Maraging Steels 185 HJ, Grade 200	275 to 325	Annealed	45	-	.002	.003	.005	.008	.009	.011	.013	T15 M33
0062	185 Mi, Grade 258 185 Mi, Grade 308	50R _c to 52R _c	Quenched and Tempered	30	-	.001	.002	.003	.003	.004	.005	.005	T15 M33
0063	Maraging Stools	175 to 225	Annealed	50	-,	.002	.003	.006	.009	.010	.014	.016	T15 M33
. 0064	255 Hi	50R _c to 52R _c	Quenched and Tempered	20	-	100.	.000	.003	.003	.004	.005	.005	T15 M33
. 0065	NP9-4-25	325 to 375	Annealed	35	-	.002	.003	.005	.007	.008	.009	.010	T15 M33
0066	IJ	43R _c to 48R _c	Quenched and Tempered	30	-	.002	.003	.005	.007	.008	.009	.010	T15 M33

•							FEED -		r Revolut				
MATERIAL AND CONDITION CODE	MklMllL	NEED Kiss Anlk	Cmllrlw	\$fmo	VII	I/l	Mmlull 1/4	.lmollz 1/3	ma- Ir 3/4	ndm I	1-1/2	1	H llinlll
	ULIRI-IIICI Slmnczli SKtl\$(eont-)	325			V-1-	-,-	-, -	-7.	- '		·		
0067	n W4-4-4S	to 375	Annealed	30	-	.002	.003	.005	.007	.008	.009	.010	T15 M? — .
0068	100L slmls Hlcn sptod Ml mt la m ll 11 Us 12	zoo to Z50	Asmea2ed	40	-	.002	.003	.005	.008	.003	.011	.013	M1′0′ M7 M°
0069	Mlga p6 S3 class I g: :4 m	225 to 275	Annealed	30	-	. 0oz	.003	.005′	.008	.010	.011	.013	M10 Mi hll .
0070	mlh SPS94 m ~j\$,\$ z m MS tla	Z25 to Z75	Annea3sd	Zo	-	.001	. 0oz	.004	.005	.006	.007 4	.008	Ml M7 Ml
0071	Hat lolk	150 to 200	AnneAm3	55	-	. Ooz	.003	.006	.009	.011	.014	.016	Mi M;- M1
0072	RIO 1114 11-12 RTI D-1113	zoo to Z50	Anneal ad	45	-	.002	.003	.005	.008	.010	.011	.013	MI M7 <u>M</u> -
0073	No! Wk	150 to zoo	Annealed	40	-	.002	.003	.005	.008	.009	.011	.013	M h. M7 M — —
0074	No! Wk Ilzl 1123 MII HZI UZ4 M42 M22 Nzs M43	zoo to Z50	Anneal cd	30 8	-	. 002	.003	.005	.008	.010	.011	.013	M10 M" M
0075		3Z5 to 375	Quenched and Tempered	35	-	. 002	.003	.005	.007	.008	.009	.010	Tl M.,
0076	IPal mrk 118 114 117 MI 217 MI	4aRc to soR ₌	C3umxhad and Tcmpered	15	-	.0005	.001	. 002	. 002	.003	.003	.004	T M33
0077		50 Rc to 52 Xc	Quanched and Tampered	10		.0005	.001	.0oz	.0oz	.003	.003	. 001	Tl> M33

MATERIAL AND								Inches I					
CONDITION CODE	MATERIAL	HARD- 2234	COMBITION	SPEED		т	HOMINAL	. HOLE OIL	METER - 1	Inches			HSS
•	_	BHX		ipa	1/15	1/8	1/4	1/2	3/4	1	1-1/2	2	MATERIAL
.· 0078	TOOL STEELS (cont.) Cold Work A7 84 B1 B5 B2 D7 B3	200 to 250	Annealed	25	-	.001	.002	.004	.005	.006	.007	800.	T15 M33
0079	Cold Work A2 A8 82 A3 A8 88 A4 A10 Q7 A5 01	200 to 250	Annealed	40	-	.002	.003	.005	.008	.010	.011	.013	M10 M7 M1
0080	Shock Resisting S1 S5 S2 S5 S4 S7	175 to 225	Annealed	50	-	.002	.003	.005	.009	.011	.014	.016	M10 M7 M1
0081	No14 P1 P4 P2 P5 P3 P6	100 to 150	Annealed	65	•	.002	.004	.007	.010	.012	.015	.018	M10 M7 M1
0082	Mold P28 P21	150 to 200	Annealed	55	-	.002	.003	.006	.00-)	.011	.014	.016	M10 M7 M1
0083	Special Purgose Li Li Li LZ LF	150 to 200	Annealed	55	•	.002	.003	.006	.00+	.011	.014	.016	M10 M7 M1
0084	Special Purpose Fi F2 F3	200 to 250	Annealed	45	-	.002	.003	.005	.008	.010	.011	.013	M10 M7 M1
0085	Water Hardening Wi W4 W2 W5	150 to 250	Annealed	85	-	.002	.004	.007	.010	.012	.015	.018	M10 M7 M1
. 0086	CAST STEELS Carbon 1020 1025	120 to 150	Annealed or Normalized	65 80	.001	.003	.005	.00)	.01.2	.013	.018	.022	M10 M7 M1
0087	Carben 1836 1858	125 to 175	Anneal ed	60 75	.001	.003	.005	.009	.012	.013	.018	.022	M10 M7 M1
0088 .	1040 1070 1045	175 to 225	Normalized	50 65	.001 -	. 002	.004	.007	.010	.012	.015	.018	M10 M7 M1

		T	1	1	T		FFFR	- torkes	Per Revol	w1.on			
MATERIAL AND		HARD-							AMETER -				- 22H
CONDITION CODE	MATERIAL	NESS	COMB IT! ON	SPEED	1/18	1/8	1/4	1/2	3/4	1	1-1/2	2	HSS TOOL MATERIAL
0089	CAST STEELS (CORT.) Carben 1038 1058 1048 1070 1045	250 to 300	Quenched and Tempered	40	-	.002	.003	.005	.008	.009	.011	.013	M10 M7 M1
. 0090	Lev Alley	150 to 200	Annealed	50 65	.001	.003	.004	.007	.010	.012	.015	.018	M10 M7 M1
0091	1320 4820 2320 5128 2325 8420 3125 8520 4020 9528 4120 9525	175 to 225	Normalized	45 55	.001	.002	.003	.006	.009	.010	.014	.016	M10 M7 M1
0092		250 to 300	Quenched and Tempered	45	-	.002	.003	.005	.008	.009	.011	.013	M10 M7 M1
0093		175 to 225	Annealed	45 55	.001 	.002	.003	.006	.009	.010	.014	.016	M10 M7 M1
0094	Lew Alley 1330 4340 1349 4849 1345 5130	175 to 250	Normalized	45	•	.002	.003	.005	.008	.009	.011	.013	M10 M7 M1
0095	2330 5140 2345 8830 3139 8839 3148 8438 4030 8435 4048 8448 4059 8838	250 to 300	Quenched and Tempered	40	•	.002	.003	.005	.008	.009	.011	.013	M10 M7 M1
0096	4138 88330 4140 8849 4330 9538 4335	300 to 350	Quenched and Tempered	35	-	.002	.003	.006	.008	.007	.010	.011	M10 M7 M1
9097		350 to 400	Quenched and Tempered	25	-	.002	.003	.005	.007	.009	.010	.010	T15 M33
0098	Corresion Resistant CF-18F(383) CM-78	140 to 170	Annealed	45 55	.001	.003	.004	.007	.010	.012	.015	.018	M10 M7 M1
0099	Corresion Resistant CA-15(419) CA-46(429) CB-38(431) CC-58(448)	175 to 225	Normalized and Tempered	45	-	.002	.003	.005	.008	.009	.011	.013	M10 M7 M1

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MATERIAL AND								Inches P					
CONDITION CODE	MATERIAL	MARD- MESS BHN	COMBITION	SPEED Epm				HOLE DIA				r	22H Jeot Haterial
	CAST STEELS (cent.)	an#		'	1/16	1/8	1/4	1/2	3/4	t	1-1/2	2	
.*	Cerrosion Resistant CF-3(384L) CF-129(316)	140											М10
0100	CF-38(318L) CF-20(302) CF-8(304) CG-88(317) CF-8C(347) CH-20(309)	190	Annealed	35	-	.002	.003	.006	.008	.009	.010	.011	M7 M1
•	[CF-8M(316) CR-20(316)]												
0101	Heat Resistant NA HS NC(448) HT	160 to	As Gast	40	-	.002	.003	.005	.008	.009	.011	.013	M10 M7
•	NB(327) NX NT(330)	210									_		М1
0102	Heat Resistant MC(312) HK(318)	160		_							·		міо
0102	MF(3828) XL MH(388) MM XI	to 210	As Cast	35	-	.002	.003	.006	.008	.009	.010	.011	147 MI
0103	GRAY TRONS	110		80	.001								M10
0104	ASTM Classes 28 and 25 (Ferritic)	to	Annealed	140	-	.003	.006	.010	.012	.014	.018	.022	M7, M.
		140		230		.003	.006	.010	.012	.014	.018	.022	Carbido
0105	ASTM Class 38	150 to	As Cast	75 95	.001	.003	.005	.008	.010	.012	.014		M10 M7, M1
. 0106	(Passistic - Fassitic)	190	023.	195		.003	.005	.008	.010	.012	.014	.015	C2 Carbide
0107		190		65	.001						•		MIO
0108	ASTM Classes 35 and 40 (Pearlitic)	to	As Cast	85		.003	.005	.008	.010	.012	.014	.015	M7,M1
		220		180		.003	.005	.008	.010	.012	.014	.015	C2 Carbide
0109	ASIM Classes 45 and 50	220		55	100.								M10 M7, M1
0110	(Pearlitic + Free Cachides)	10 260	As Cast	70 160	-	.002	.004	,006	.008	.010	.012	.014	CZ
0111		250	As Cast			.002	.004	.008	.008	.010	.012	.014	Carbine
0111	ASTM Classes 55, 68 & 68+ (Pearlitte and Accouler +	to	or Quenched	45	-	.001	.003	.005	.007	.007	.012	.012	M10 M7, M1
0112	Free Carbides)	320	ami Tempered	95	,	.001	.003	.005	.007	.009	.012	.012	C2 Carbide
	SUCTILE IRONS	140		80	.001								М10
0113	Ferritic 80-48-18 85-45-12	to 190	Annealed	100	-	.003	.005	.008	.010	.012	.014	.015	M7 M1
		190											
0114		to	As Cast	60	-	.002	.004	.006	.008	.010	.012	.015	M10 M7
	Ferritic - Pearlitic	225											MI
25	80-55-98	225					,				-	-	M10
0115		to 260	As Cast	45	-	.002	.003	.006	.008	.010	.012	.012	M7
		200											мі

MATERIAL AND		1		<u> </u>			FEED -	Inches P	er Revolu	tion			
CONDITION CODE	MATERIAL	HARD-	COMBITION	SPEEB	<u> </u>	γ	ROCINAL	HOLE DIA	PETER - I	nches		γ	HSS Tool
		BXN		{pe	1/16	1/8	1/4	1/2	3/4	1	1-1/2	2	MATERIAL
0116	DUCTILE IRONS (cont.) Pearlitic - Martensitic 100-70-03	240 to 300	Normalized and Tempered	40	-	.002	.003	.006	.008	.010	.012	.012	M10 M7 M1
0117	Martensitic 120-90-02	270 to 330	Quenched and Tempered	25	•	.001	.002	.004	.005	.006	.007	.008	M10 M7 M1
0118 :	MALLEABLE INOMS Ferritic 37518 35018	110 to 160	Malleablized	120 1.7*	*	.002	.004	•007	.010	.012	.015	.018	м10 м7 м1
0119	Passlitic	160 to 220	Malleablized and Heat Treated	90 2.0*	-	.002	.004	.006	.008	.010	.015	.015	M10 M7 M1
0120	45087 49084 45010 50007	200 to 240	Malleahlized and Heat Treated	75 1.5*	-	.002	.004	.006	.008	.010	.015	.015	M10 M7 M1
0121	Fearfitic 53004 50003	200 to 255	Mallcablized and Heat Treated	80 1.3*	•	.002	.004	.006	.008	.010	.015	.015	M10 M7 M1
0122	Pearlitic 80002	240 to 280	Maileablized and Heat Treated	70 1.1*	-	.002	.004	.006	.008	.010	.015	.015	M10 M7 M1
0123	FREE MACHINING STAINLESS STEELS FERRILIC 430F 430F(Se)	135 to 185	Annealed	100 140	- 001	.003	.005	.010	.014	.018	.020	.025	M10 M7 M1
0124	Austenitic	135 to 185	Annealed	80 100	- 001	.003	.005	.010	.014	.018	.020	.025	M10 M7 M1
0125	303 383FF 393Se 347F(Se)	225 to 275	Cold Drawn	70 90	.001	.003	.005	.010	.014	.018	.020	.025	M10 M7 M1
0126	Wartensstic 418 418F	135 to 185	Annealed	100 140	.001	.003	.005	.010	.014	.018	.020	. 025	M10 M7 M1

*If casting skin is removed multiply speed by this factor.

MATERIAL AND								Inches P					
CONDITION	MATERIAL	HARD- NESS	CONDITION	SPEED			HOMINAL	HOLE DIA	ETER - 1	nches	i 		22H
CODE	•	вня		l pe	1/16	1/8	1/4	1/2	3/4	ı	1-1/2	2	MATERIAL
• •	FREE MACHINING STAINLESS STEELS (cent.)	185	Annealed	100	.001			<u> </u>		!			M10
0127		tó	or	130	-	.003	.005	.010	.014	.018	.020	.025	M7
•		240	Cold Drawn					! }		! 			М
0400	[275	Quenched	50	.001						·	i - · ·	N10
0128	Wartensitec	to	and	65	-	.002	.004	.006	.nos	.010	.014	.018	M7
	416 416F	325	Tempered			<u> </u>	<u> </u>	!	· 			İ	MI
0129		375	Quenched					l				i	
0129		to	and	40	-	100.	.062	.004	. 006	.003	.00;	.010	.º15
		425	Tempered			<u> </u>	<u></u>	! !				: : —	M33
0130	STAINLESS STEELS Ferritic	135						į	! !				7110
0130	485 438 446 438 442 459	to	Annealed	60	-	.002	.003	200.	٠٠ ٪	.010	.014	.018	M7
	434 443 502	185							 			i :	M1
0131		135						<u>.</u>					M10
. 0151	Austenitic	to	Annealed	50	-	.002	.003	.005	, 009	.010	.013	.016	М7
•	201 384L 202 305	185										,	MI
0132	301 321 302 347	225											M10
0132	394 348	to	Cold Drawn	45	-	.002	.003	.005	.008	.011	.013	.016	M7
	·····	275		-									M1
	Austenitic 3028 3105 317	135											M10
0133	389 314 318 3095 316 329	to	Annealed	45	-	.002	.003	.005	.008	.011	.013	.016	М7
	310 3161 330	185											MI
0124		135		55	.001								WIO
0134		to 185	Annealed	70	-	.003	.004	. 1106	.008	.010	.014	.018	М7
		103			•				_ .				MI
0135		175											M10
0135		to	Annealed	60	-	.002	.003	.006	.008	.011	.011	.018	M7
	Hartensitic 403 420	225											MI
0136	410 501	475	Quenched										мю
0136		10 325	and Fempered	50	-	. 002	.003	.005	.008	.011	.013	.016	M7
		,,,,	rempered										M1
0137	;	375	Quenched										İ
0137		to 425	and Tempered	-10	-	.001	.002	.004	.006	.008	.009	.010	115 M33
į	***************************************		compored							i			

MATERIAL AND		T		1			FEtO	- Inches	Fe Revol	Jt ron			
CONDITION CODE		HARD.	•	SPEEG					AMETER -				HSS
	MATERIAL	BHH	CONDITIEN	1 pm	1 '16	1/8	1/4	12	3.4	1	1-1 2	2	TOOL MATERIAL
0138	STAINLESS STEELS (CONT.)	225 to 275	Annealed	00	-	.02	.003	. 005	.00⊀	.011	.913	.016	M10 M7 M1
0139	Wartensitic 414 422 431	275 to 325	Quenched and Tempered	45	-	.002	.003	.005	.10%	.011	.013	.016	M10 M7 M1
0140		375 to 125	Quenched and Tempered	40	-	.001	.002	.054	.006	.008	.003	.010	T15 M33
0141		225 to 275	Annealed	40	-	.002	.003	.005	.00)	.010	.012	.013	M10 M7 M1
0142	Martensitic 418 4408	.275 to 325	Quenched and Tempered	35	-	.001	.002	.003	.005	.006	.coo.	.009	M10 M7 M1
0143	440A 440E	375 to 425	Quenched and Tempered	25	-	.001	.002	.003	.004	.005	.006	.007	T15 M33
0144		48Re to 52Re	Quenched and Tempered	20	•	.0005	.001	.002	.002	.003	.003	.004	T15 M33
0145	PRECIPITATION HADDENING STAINLESS STEELS	150 to 200	Annealed	45	•	.002	٤٥٥.	.005	.008	.010	.012	.015	M10 M7 M1
0146	17-49H 17-79H	275 to 125	Hardened	-10	•	.001	.003	.005	.008	.008	.010	.012	M10 M7 M1
0147	PMIS-7Me AM350 AM355 AM359	325 to ;74.	ilardened	30	-	.001	.003	.904	.005	.007	.010	.012	7 [5 M33
0148		375 to 440	Hardened	20	-	.001	.002	.003	.004	.005	.006	.007	T15 M33

	<u> </u>		1										
MATERIAL AND		HARD-			 				Per Revol				
CONDITION CODE	MATERIAL	NES2 NES2	COMBITION	SPEEB I pat	1/16	1/8	1/4	1/2	3/4	Inches	1-1/2	2	NATERIAL HZZ HZZ
; ,	STOJJA MUINATIT	1,,,	 	 		 -	 	+	+	+	 	 	
0149	Commercially Pure	110		80	.0005	Į.	İ						М10
0149	99.5	170	Annealed	100	-	.0005	.002	.006	.007	.008	.010	.013	М7
•				**		İ					1	1	МІ
	Commercially Pure	140		65	.0005					 			
. 0150	99.2	to	Annealed	80		.0008	.003	.006	.007	.008	.010		M10
	99.0 0.15 to 0.20 Pd	200								.008	.010	.013	M7 M1
	Commercially Pure	200		40	.001			 	+-	+		 	
0151	99 0	to	Annealed	50	-	.002	.005	.006	.007	.008	.010	.013	M10 M7
	98.9	275	<u> </u>									.013	MI
	Alpha & Alpha-Beta Alloys	300								1		ļ	1
0152	2Fe-2Cr-2Me 5A1-2.5Sn 5A1-2.5Sn (1mm 0)	to	Annealed	40	-	.002	.005	.006	.007	.008	.010	.011	M10 M7
	7A1-2Cb-ITa 4A1-3Ne-IY	340										-	MI
	Alpha & Alpha-Beta Allays	310						1				-	
0153	7A1-12Z1 6A1-4Y	to	Annealed	30	-	.002	.005	.006	.007	.008	.009	.010	M10 M7
• .	4A1-4Kn	350									.007		MI MI
	Alpha & Alpha-Beta Alloys	320					ļ 	 	┼				
0154	7AI-4Ma 8AI-1Mo-1Y	to	Annealed	20		.002	005	201					MIO
	5A1-1,25Fe-2,75Cr 5A1-1,5Fe-1,4Cr-1,2Ma	370		"	•	.002	.005	.006	.007	.008	.009	.010	М7
	6A1-8V-2Sn-1(Fe, Cu)							ļ	ļ				M1
0155	Alpha & Alpha-Beta Alloys	320											
	1A1 - 8Y-5Fe	to	Annealed	15	-	.002	.004	.005	.006	.007	.008	.009	T15
		380	·									_	M33
	Alpha & Alpha-Beta Alloys	350	Solution			ļ		İ					
0156	8A1-4Y 4A1-4Mn	to.	Treated	25	-	.001	.002	.004	.005	.006	.007	.008	T15
		400	and Aged			j							M33
	Alpha & Alpha-Beta Alloys 2Fe-2Cr-2Ne	375	Solution										
0157	5A1-1.75Fe-2.75Cr 8A1-6Y-2Sn-1(Fe,Cw)	to	Treated	20	-	.001	.002	.003	.004	.004	.005	.005	T15
	5A1-1, SFe-1, 4Cr-1, 2He 7A1-4He and 4A1-3He-1Y	420	and Aged		ł								М33
	Alpha & Alpha-Seta Alloys	375	Solution										
0158	1A1-8Y-5Fe	to	Treated	15	-	.0005	.001	.0015	.0015	.002	.002	.003	T15
Ĺ		440	and Aged										м33
	Bata Alloys	310				~ ~							
0159	3A1-13Y-11Cr	to	Solution Treated	20	-	.001	.003	.004	.005	.006	.007	.008	M10 M7
	L	350											мі
									. 1	- 1		- 1	

MAMPIDIAL AND				-				Inches P	er Bevelu	1.00			
MATERIAL AND CONDITION CODE		HARD-	:					HOLE BIA				 -	ZZN
	MATERIAL	RK8 NESS	COMBITION	SPEEB Ipm	1/15	1/8	1/4	1/2	3/4	1	1-1/2	2	TOOL NATERFAL
0160	TITANISM ALLOYS (cent.) Beta Alloys JAI-13V-11Cr	375 to 440	Solution Treated and Aged	15	-	.0005	.001	.0015	.0015	.002	.002	.003	T15 M33
0161	Alphra & Alphra-Beta Alloys 2.5Al-16V	150 to 200	Solution Treated	55 70	.001	.002	.005	.006	.008	.009	.010	.012	M10 M7 M1
0162	3A1-2.5¥	200 to 260	Annealed	50	-	.002	.005	.006	.008	.009	.010	.012	М10 М7 М1
0163	HIGH TEMPERATURE ALLOYS RICKOI BASO - WYOUGHT INCOME! 72! (INCOMEL B) INCOMEL B) INCOMEL 72! (INCOMEL Z) INCOMEL Z) INCOMEL Z) INCOMEL Z) BO WALLEY SO WALL	200 to 300	Annealed or Solution Treated	20	•	.001	.001	.003	.005	.007	.010	.010	T15 M33
0164	INCONEL 202 USINET 700 INCONEL 718 UMITEM 1753 INCONEL 607 MAPPALOT HIBMIC 75 RENE* 41 HIBMIC 00 RENE* 52 HIBMIC 00 RENE* 52 HIBMIC 00 RENE* 52 HIBMIC 00 RENE* 52 HIBMIC 00 RENE* 52	300 to 400	Solution Treated and Aged	15	-	.001	.001	.003	.006	.007	.010	.010	T15 M33
0165	Nickel Base - Trought MASTELLEY B MASTELLEY 1	140 to 220	Annealed	30	-	.002	.004	.006	.007	.010	.012	.012	T15 M33
0166	INCOLOT 884 INCORE 1906 (INCOREL) INCOREL 884 (INCOREL 806) REFRACTALSY 28	280 to 310	Cold Drawn	20	-	.001	.002	.003	.005	.007	.010	.010	T15 M33
0167	Michel Base - Cast Mimmic 75 MASTELLOY 6 MIMMIC 80 MASTELLOY C MIMMIC 80 MASTELLOY C MIMMIC 80 MASTELLOY C MIMMIC 100 MASTELLOY C MIMMIC 100 MASTELLOY MIMMIC 100 MASTELLOY MIMMIC 100 WASTELLOY MIMIC 100 WASTELLOY MIMMIC 100 WASTELLOY MIMMIC 100 WASTELLOY MIMMIC	250 to 350	As Cast	10	•	.001	.001	.002	.004	.006	.007	.008	T15 M33
0168	Cobait Base - Brought HATHES ALLOY 25	180 to 230	Solution Treated	25	-	.002	.004	.006	.007	.010	.012	.012	T15 M33
0169 -	1 1658 5-618 Y-36	270 to 320	Solution Treated and Aged	15	•	.001	.002	.003	.005	.007	.010	.010	T15 M33
0170	Cobait Base - Cast MATHES ALLOY 30 W1-52 MATHES STELLITE 21 MATHES STELLITE 21 MATHES STELLITE 21 MATHES STELLITE 21 MATHES STELLITE 21 MATHES	220 to 290	As Cast	10	-	.001	.001	.002	.004	.006	.007	.008	T15 M33

ATERIAL AND			 				****	•				····	
ONDITION CODE		HARD-		1	 			- Inches I					J 1
***************************************	MATERIAL	NESS NKB	CONDITION	SPEEB	1		1	L HOLE DIA	ACIEN -	ncnes			1001
					1/16	1/8	1/4	1/2	3/4	1	1-1/2	2	MATERIAL
.' 0171	NIGH TEMPERATURE ALLOTS (cont.) Iron Base - Brought	180 to 230	Solution Treated	20	-	.002	.604	.006	.007	.010	.012	.612	Г15 М13
0172	Incoluty and 18-25-6 Incoluty and 19-26-6 Incoluty and 19-26 Incoluty and 19-26 Incoluty and 19-26 Incoluty and 19-27 Incoluty and 19-27 Incoluty and Inco	250 to 320	Solution Treated and Aged	15	-	.002	.004	.006	.007	.010	.012	.012	T15 M33
0173	Hickel Base - Brought 78 Hickel	180 to 200	As Rolled	50	-	.002	.004	.007	. 009	.vic	.012	.012	MIO M7 MI
	REFRACTORY ALLOYS* Tungsten Alloys Tungsten, 852 density	180 to 200	Pressed and Sintered		•	- 	<u> </u>	.		<u> </u>			
٠.	Tungsten Alloys Tungsten, 935 density	290 to 320	Pressed and Sintered	s	ince ti.	<u>Tu</u> ngsten is		Drilling				chippi	ng
	Tungsten Alloys Tungsten, 985 density	290 to 320	Forged	te c o	o occui urbide rder to	as the drills momentuming the hole	irill ent ust be u ze the to	ers and ised sincendency	leaves ce tool of the t	the wor wear is ungsten	kniece. very r	Solid apid.	'n
	Tungsten Alleys Tungsten, 99s density	290 to 320	Arc Cast	.11	100°-	600° F b rre sugg Drid: 11 Drill ma	efore dr ested; 8°/90°	illing.	The fol	lowing	ma hin	ing con	-
	Tungsten Aflays Tungsten - 2 Thoria	260 to 320	Pressed and Sintered		1	Cutting s Feed: .0 Lubrican	poed: 2 102 in./	00 ft./n rev. tor	oin. Ta 174º				
	Tungsten Alloys W-15We	260 to 120	As Cast		rilling	by Elec dered as	powd Cical Da	er in ai ischarge	r streat Machi	n ning (El	⊃ DM) slu		
	Tungsten Alloys W-10Ag Gyrowet Mallory 2000	290 to 120	Pressed and Sintered										
0174	Melýbdenum Alleys Me-Sir Me-JOF IZM IZC	220 to 290	Stress Relieved	75 100	-	.003	.005	.007	-	_	-	-	T15

^{*}Due to the brittleness of refractory alloys, cracking, chipping, flaking and breakout tend to occur, particularly on the edges of the machined surfaces.

MATERIAL AND		MARD-			-			- Inches					HSS
CONDITION CODE	MATERIAL	122 22,12	CONDITION	SPEED	1/18	1/8	1/4	1/2	3/4	INCORS	1-1/2	2	TOOL WATERIAL
0175	REFRACTORY ALLOYS* (cont.) Columbium Alloys Ch-752 0-31 0-43	170 to 225	Stress Relieved	50 75	.001	.003	.005	.007	-	-	-	-	T15 M33
0176	Tantalum Alloys Ta-10W MICREL ALLOYS	200 to 250	Stress Relieved	50 50	-001	.002	.002	.004	-	-	-	-	T15 M33
0177 ·	MICKEL 700 (*A* MICKEL) MICKEL 701 (169 CAREAM MT) MICKEL 705 (*A* MICKEL) MICKEL 705 (*A* MICKEL) MICKEL 701 (*O* MICKEL) MICKEL 701 (*O* MICKEL) MICKEL 702 (*AKEL 700 MICKEL 704 MICKEL 700 MICKEL 705 MICKEL 700	80 to 170	Anncaled or Cold Drawn	65	-	.002	.003	.006	.008	.015	.018	.020	M10 M7 M1
0178	DONEL 400 (NOMEL) DONEL 401 WOMEL 402 WOMEL 403 WOMEL 404 WOMEL 581 GRAWNITIES (48 WOMEL)	115 to 240	Annealed or Cold Drawn	50	-	.002	.003	.006	.008	.010	.012	.015	M10 M7 M1
0179	PERMANICEEL JOD (PERMANICEEL) BREANICEEL JOT (SOBANICEEL)	150 to 320	Solution Treated	25	-	.002	.003	.006	.008	.010	.012	.015	T15 M33
0180	NI-SPAN-C BOZ (NI-SPAN-C) BONEL K-500 (K MONEL)	330 to 360	Aged	10	-	.001	.002	.003	.005	.007	.009	.011	T15 M33
0181	Nitinol Alloys 55M1-45T1	210 to 230	Wrought	20	-	.001	.001	. 002	.003	.004	.004	.005	T15 M33
0182	Mitinel Alloys	300 to 340	Annealed	15	-	.001	.001	.002	.003	.004	.004	.005	T15 M33
0183		48R _c to 52R _c	Quenched	10	-	.001	.001	.002	.003	.003	.004	.005	T15 M33
0184	Nitinol Allays SOMi-40Ti	290 to 320	Annealed	10	-	.001	.001	.002	.003	.003	.004	.005	T15 M33
0185	[108 137 218 AR12 8	40 to 100 00kg	As Cast	140 300	.001	.003	.007	.012	.016	.020	.025	.030	M10 M7 M1

^{*}Due to the brittleness of refractory alloys, cracking, chipping, flaking and breakout tend to occur, particularly on the edges of the machined surfaces.

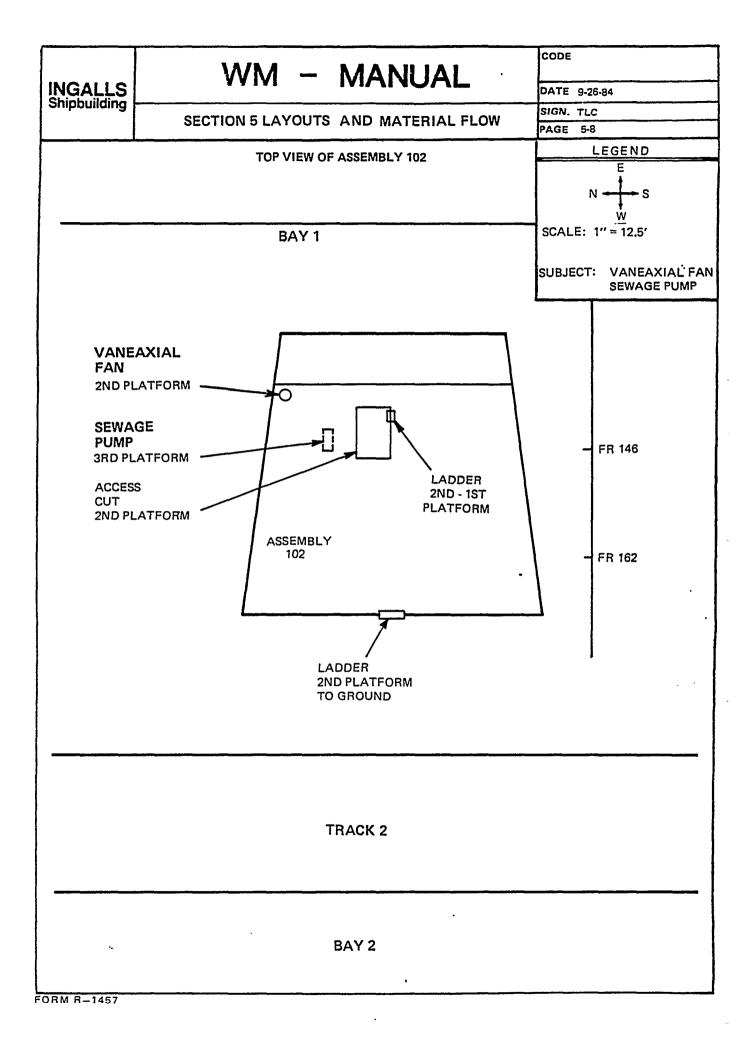
MATERIAL AND							FEED -	inches f	er Revolu	ution			
CONDITION CODE	MATERIAL	HARD- NESS	COMPLETION	SPEED			MOMINAL	HOLE OIA	METER -	Inches			HZ2
		DAM ME22	COMBITION	tpe	1/16	1/1	1/4	1/2	3/4	1	1-1/2	2	TOOL MATERIAL
° 0186	ALUMIAUM ALLOTS (cont.) Heat Treated Cast 48E 142 315 177 195 355 A132 B195 356 B132 220 758	70 to 125 500ks	Solution Treated and Aged	140 250	.001	.003	.007	.012	.016	.020	.025	.030	M10 M7 M1
0187	Celd Brawn Brought 1988 5805 5896 5454 1198 5957 5154 5456 3093 5858 5254 5852 3004 5883 5357 5856	30 to 80 500kg	Cold Drawn	140 250	.001 -	.003	.007	.012	.016	.020	.025	.030	M10 M7 M1
0188	Nest Treated Wreught 2011 2025 6061 6463 2014 2017 6062 7015 2017 2210 6063 7018 2018 4032 6151 7170 2024 6053 6262	75 to 150 500kg	Solution Treated and Aged	140 250	.001	.003	.007	.012	.016	.020	.025	.030	M10 M7 M1
0189	MACHESIUM ALLOTS Cast Alloys Aminoa Afria teola 2541A Afria Afria E531A 2841A Afria Afria 1831A 2842A Afria Afric 1832A 2851A Afria Afric 1832A 2851A Afria Afria 2872A 61A 2881A Afria 6536A	40 to 30 500kg	As Cast, Annealed or Solution Treated and Aged	140 330	.001 -	.003	.007	.012	.016	.020	.025	.030	M10 M7 M1
0190 · .	Braught Allays A3A A781A MA31A TA34A A271A A263 M821A ZE10A A2318 A263 M821A ZE20A A2315 A268A B1A ZE21A A260A A270 PE ZE8BA A2408 E233A	40 to 70 500kg	Annealed, Gold Drawn, Solution Treated and Aged	140 300	.001	.003	.007	.012	.016	.020	.025	.030	M10 M7 M1
0191	COPPER ALLOYS 314 LEADED COMM. SPORZE 332 NIAM LEASES SRASS 348 NESUN LEASES SRASS 347 & 353 NIAM PA SRASS 335 LEVERA MICH PA SRASS 335 LEVERA MICH PA SRASS	20R _B to 70R _P	Annealed	140 175	.001	.003	.004	.008	.012	.018	.020	. 022	M10 M7 M1
0192	JAM PARE CUTTING DRASS JID FARE CUTTING DWITZ JIT FORGING BRASS JOS ARCHITECTURAL BROWZE 405 LEADED HAVAL BRASS 544 FARE CUTTINGS BROWZE	60R _P to 100R _P	Cold Drawn	140 200	.001 -	.003	.004	.008	.012	.018	.020	.022	M10 M7 M1
0193	240 LOW GRASS 280 CARRINGER BRASS 70% 280 TELLOW BRASS 280 HUMIZ BETAL 335 LOW LEADER BRASS 705 308 70 HUMIZ BETAL	20RB to 70RB	Annealed	10n 120	.001	.003	.006	.010	.010	.015	.015	.020	M10 M7 M1
0194	SS NIGH ESTLICEN BRONZE SINGER SESMANNES ELS SESSER MARKEMENT FRE	60R _B to 100R _E	Cold Drawn	120 140	.001	003	.006	.010	.010	.015	.015	.020	M10 M7 M1
0195	182 OXTGEN FREE COPPER 110 ELECTMENTIC ENTRE PIECE COPPER 122 POS, POSISISTED CW 170, 172 & 173 SE-CW 270 GILLENING, 035 220 COMMERCIAL STAME? 327 POSISISTED 328 POSISISTED	20RE to 70RE	Annealed	50 60	.001	.003	.004	.008	.010	.012	.015	.020	M10 M7 M1
0196	318 PHOSPHOR BROWZE SS 321 PHOSPHOR BROWZE ES 324 PHOSPHOR BROWZE TOS 614 ALWEISHWE BROWZE 106 COPPER WICKEL TOS	60R _B to IUOR _E	Cold Drawn	60 75	.001	.003	.004	.008	.010	.012	.015	.020	M10 M7 M1

MATERIAL AND	WATERIAL	HARB- HESS	CONSTITUT	SPEED	FEEB - Inches Per Revolution							HSS	
CONDITION CODE					HOWINAL HOLE DIAMETER - Inches								
		SKN		i pa	1/16	1/8	1/4	1/2	3/4	1	1-1/2	2	MATERIAL
0197	ZINC ALLOYS SAE 903 SAE 925	80 to	Die Cast	7.25	. 002	.003	. 007	.012	.016	.018	. 020	. 025	M10 M7
0109	URANIUM	55R _A	As Cast or	350	.001	.002	.003	.004	.005	.005	. 005	.005	M1 20%TaC 72%WC
0198	UNINION	57RA	As Rolled										8 % Co
0199	ZERCONFUM	140 to 280	Rolled, Extruded or Forged	50	.002	.003	.004	.005	.008	.010	.012	.015	M10 M7 M1
0200	WANGAMESE CBC #770 CBC #772 CBC #778	140 to 220	Hot Rolled, Extruded or Forged	50	.0015	.003	.005	.007	.009	.012	.014	.016	M10 M7 M1
0201	THERMOPLASTICS POLYETHYLENC POLYPREPILENE TRE-FLUGRECAROOM BUTTABLES	31R _R to	Extruded, Molded or Cast	100	.005	.010	.012	.015	.018	.020	. 025	. 030	M10 M7 M1
0202	MIGN-IMPACT STREEME ACRYLOMISTRILE- STADE SME-STREEME NOBIFIES ACCTLIC	83R _R to 107R _R	Extruded, Molded or Cast	100	.002	.004	.005	. 006	. 006	.008	.008	.010	M10 M7 M1
0203	NYLON ACETALS POLYCARSOMATE	79R _M to 100R _M	Molded	100	. 002	.005	.006	.008	.010	.012	.015	.015	M10 M7 M1
0204	[ACRYLICS]	80R _M to	Extruded, Molded or Cast	100	. 002	.005	. 006	.008	.010	.012	.015	.015	M10 M7 M1
0205	PELYSTYRENES	70R _N to 95R _N	Molded or Extruded	200	.001	.002	.003	.004	.005	.006	.007	.008	M10 M7 M1
0206	THERMOSETTING PLASTICS	50R _M to	Molded	150	.003	. 005	.006	.008	.010	. 012	.015	. 015	M16 M7 M1
0207	NAME STATES	LOOR to	Molded	100	.002	.005	. 006	.008	. 010	.012	.015	.015	M1C M7 M1

*Special carbide composition for machining Uranium

MATERIAL AND MITERIAL MISS CONDITION MISS
O208 REINFORCED PLASTICS 100 Molded 25 .003 .007 .015 .020 .025 .030 .030 .030 MIO MI STUTE PROBLEM REINFORCED PLASTICS 100 Molded 25 .003 .007 .015 .020 .025 .030 .030 .030 MIO MI MI MI CC-2 Carbide
0208 REINFORCED PLASTICS 55° to Molded 25 .003 .007 .015 .020 .025 .030 .030 .030 M10 M17 M1 M1 M1 M1 M1 M1 M
0209 Silita filits Molded 25 .003 .007 .015 .020 .025 .030 .030 M10 M17 M1
0209 SILITER FIRESE SELIN (SEEPASSIL) 10 Molded 25 .003 .007 .015 .020 .025 .030 .
0209 75 No. Molded 300 .003 .007 .015 .020 .025 .030 .030 .030 .030 .030 .030 .030 .03
0209 S50 Molded 300 .003 .007 .015 .020 .025 .030 .0
0209 10 Molded 300 .003 .007 .015 .020 .025 .030 .030 .030 C-2 Carbide
75 Carbide

*Barcol Hardness.

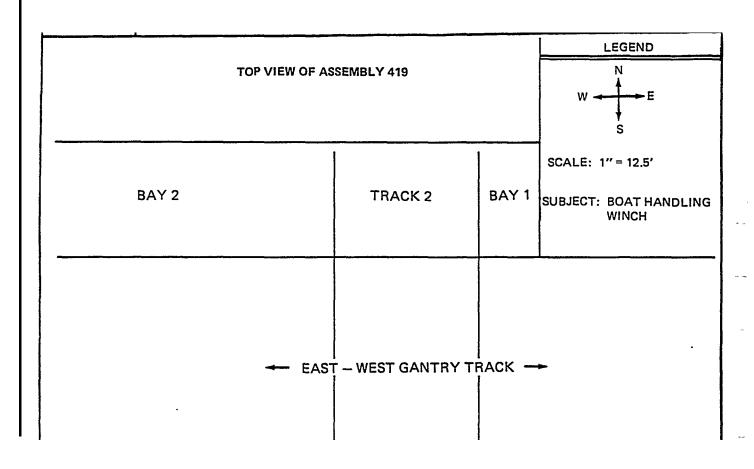


PROCESS TIME FOR DRILLING ONE INCH DEPTH HOLES IN TMU'S

						•		
MAT'L &	1/16"	1/8"	1/4"	1/2"	3/4"	1''	1-1/2"	2''
COND.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
					·			
0001	303	158	190	190	190	211	285	304
0002	273	151	182	182	182	202	273	291
0003	390	202	242	242	242	269	364	422
0004	390	202	242	242	242	269	364	388
0005	390	202	242	242	242	269	364	422
0006	Ø	420	420	560	504	560	672	747
0007	Ø	682	910	910	1024	1213	1638	1986
8000	0	910	1213	1456	1560	1518	2185	2913
0009	341	173	208	208	208	231	312	333
0010	341	165	198	198	198	220	298	317
0011	455	242	364	415	437	485	582	647
0012	390	202	242	242	242	269	364	388
0013	420	227	273	303	341	420	455	496
0014	455	390	390	445	468	520	624	693
0015	0	546	546	728	655	728	874	971

PROCESS TIME FOR DRILLING ONE INCH DEPTH HOLES IN TMU'S

7 7 7 7 11 7							
		, ,	1/2"	3/4"	1"	1-1/2"	2''
		DIA.	DIA.	DIA.	DIA.	DIA.	DIA.
HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
I	227	341	273	341	420	455	496
496	250	390	445	468	520		693
0	496	662	662	662	794	L	993
Ø	606	809	971	910	1079		1494
0	682	910	910	1024		341	1986
0	910	1213	1456	1560			2913
420	227	273	304	341		Q.	496
364	242	364	415				647
Ø	546	728	728				1092
0	780	1040					2270
0	1092	1456	1748	1872		l	3496
Ø	5462	5462	5462	8193			10925
390	202	242	242				388
420	227	341	l				606
0	455						809
	0 0 420 364 0 0 0 0 390 420	DIA. HOLE 420 227 496 260 0 496 0 606 0 682 0 910 420 227 364 242 0 546 0 780 0 1092 420 227	DIA. DIA. HOLE 420 227 341 496 260 390 0 496 662 0 606 809 0 582 910 0 910 1213 420 227 273 364 242 364 0 546 728 0 780 1040 0 1092 1456 0 5462 5462 390 202 242 420 227 341	DIA. DIA. DIA. DIA. HOLE HOLE 420 227 341 273 496 260 390 445 0 496 662 662 0 606 809 971 0 682 910 910 0 910 1213 1456 420 227 273 304 364 242 364 416 0 546 728 728 0 780 1040 1040 0 1092 1456 1748 0 5462 5462 5462 390 202 242 242 420 227 341 390	DIA. DIA. DIA. DIA. DIA. HOLE ""><td>DIA. DIA. DIA. DIA. DIA. DIA. DIA. DIA. HOLE <th< td=""><td>DIA. DIA. DIA. DIA. DIA. DIA. HOLE HOLE HOLE HOLE HOLE HOLE HOLE HOLE</td></th<></td></th<>	DIA. DIA. DIA. DIA. DIA. DIA. DIA. DIA. HOLE ""><td>DIA. DIA. DIA. DIA. DIA. DIA. HOLE HOLE HOLE HOLE HOLE HOLE HOLE HOLE</td></th<>	DIA. DIA. DIA. DIA. DIA. DIA. HOLE HOLE HOLE HOLE HOLE HOLE HOLE HOLE



Shipbuilding	SECTION 5 LAYOUTS AND UNDERSIDE VIEW OF	D MATERIAL FLOW	DATE 9-26-84 SIGN. TLC PAGE 5-11
Sinpounding			
	UNDERSIDE VIEW OF	E ACCEMBI V 202	PAGE 3-11
	0,000,000,000		LEGEND
		A AGOLINOE 1 GOO	W → E
			SCALE 1" = 12.5'
			SUBJECT: STERN TUBE
		INTEGRATION	AREA (PORT SIDE)
	LADDER 15 STEPS	INTEGRATION (STERN)	AREA (PORTSIDE))
	SCAFFOLDING	LADDER	-

1								
MAT'L &	1/16"	1/8"	1/4"	1/2"	3/4''	1''	1-1/2"	2''
COND.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
0061	Ŭ	606	209	971	910	1079	1324	1494
0052	Ũ	1820	1820	2427	3641	3541	4370	5826
0063	Ø	546	728	728	728	874	936	1092
0064	Ø	2731	2731	3641	5462	5462	6555	8740
0065	Ø	780	1040	1248	1337	1560	2081	2497
0066	0	910	1213	1456	1560	1820	2427	2913
0057	0	910	1213	1456	1560	1620	2427	2913
0058	Ø	682	910	1092	1024	1213	1489	1680
0059	Ŋ	910	1213	1456	1365	1456	1986	2241
0070	0	2731	2731	2731	3277	3641	4682	5462
0071	0	496	662	562	662	722	851	993
0072	0	606	809	971	910	971	1324	1494
0073	Ø	682	910	1092	1024	1213	1483	1680
0074	Ø	910	1213	1456	1365	1456	1986	2241
0075	0	780	1040	1248	1337	1560	2081	2497

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SECTION 5 LAYOUTS AND MATERIAL FLOW

PROCESS FLOW CHART

ACTIVITY	MACHINING OPERATION	OPERATION	\circ
	(TYPICAL)	INSPECTION	
CHART BEG	INS MACHINERY SHOP	TRANSPORT	7
CHART END	S MACHINERY SHOP	DELAY	$\frac{\nabla}{\nabla}$
		T STORAGE	V

	DESCRIPTION		SY	мв	OL	
1	Stored in Shop	0		₽	D	7
2	Transport to Assembly (Truck)	0		-	D	∇
3	Wait for Crane	0		0	*	∇
4	Place Aboard Ship (Crane)	0		•	D	∇
5	Wait for Welder	0		9	*	∇
6	Weld Machine in Place	•		₽	D	∇
7	Set up for Machining	•		₽	D	∇
8	Perform Machining Operation	•		₽	D	∇
9	Inspect Machining	0		₽	D	∇
10	Disassemble Machinery	•		Û	D	∇
11	Burn Off Welds	•	旦	₽	D	∇
12	Wait for Crane	0		b	2	∇
13	Place on Platen (Crane)	0.			D	∇
14	Wait for Truck	0			*	∇
15	Transport to Shop (Truck)	0		*	Q	∇
16	Store In Shop	0		□	D'	7
		0		\Box	D	∇
		0		₽	D	∇
		0		₽	D	∇
 		0		₽	D	∇
<u> </u>	·	0		₽	D	∇
-		0		₽	D	∇
		0		₽	D	∇
		10		₽	D	∇

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SECTION 6 - FACILITIES AND EQUIPMENT

INDEX

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I.	PORTABLE MACHINE SPECIFICATIONS A) Milling Machine B) Boring Machine C) Magnetic Base Drill Press	6-2 6-3 6-4
II.	TOOLS	
	A) Outside Machinist Personal Tool List	6 - 5 6 - 6

	7 7 7 7 TT 1	7871					·	
MAT'L &	1/16"	1/8"	1/4"	1/2"	3/4"	1"	1-1/2"	2''
COND.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA,	DIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
0106	0	93	112	140	168	186	240	298
0107	420	214	257	321	385	428	550	685
0108	Ø	101	1.21	151	182	202	260	323
0109	496	390	390	520	585	624	780	891
0110	Ø	170	170	227	256	273	341	390
0111	ଡ	1213	809	971	1040	1079	1213	1618
0112	Ø	575	383	460	492	511	575	766
0113	341	182	218	273	327	364	468	582
0114	0	455	455	606	682	728	910	971
0115	0	606	809	809	910	971	1213	1618
0116	Ø	682	910	910	1024	1092	1365	1820
0117	Ø	2185	2185	2185	2622	2913	3745	4370
0118	0	227	227	260	273	303	364	404
0119	0	303	303	404	455	485	485	647
0120	Ø	364	364	485	546	582	582	776

MAT'L &	1/16"	1/8"	1/4"	1/2"	3/4"	1"	1-1/2"	2"
COND.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
0121	Ø	341	341	455	512	546	546	728
0122	0	390	390	520	585	524	524	832
0123	273	130	156	156	167	173	234	249
0124	341	182	218	218	234	242	327	349
0125	390	202	242	242	260	269	364	388
0126	273	130	156	156	167	173	234	249
0127	273	140	168	168	180	185	252	268
0128	546	420	420	560	630	672	720	747
0129	Ø	1365	1365	1365	1365	1365	1820	2185
0130	0	455	606	606	682	728	780	809
0131	Ø	546	728	874	728	874	1008	1092
0132	Ø	606	809	971	910	882	1120	1213
0133	Ø	606	809	971	910	882	1120	1213
0134	496	260	390	520	585	624	668	693
0135	0	455	606	505	682	662	780	809

MAT'L &	1/16"	178"	1/4"	1/2"	3/4"	1''	1-1/2"	2''
COND.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
0136	0	546	728	874	819	794	1008	1092
0137	Ø	1365	1365	1365	1365	1365	1820	2185
0138	Ø	546	728	B74	819	794	1008	1092
0139	Ø	606	809	971	910	882	1120	1213
0140	0	1365	1365	1365	1365	1365	1820	2185
0141	Ø	682	910	1092	910	1092	1365	1680
0142	Ð	1560	1560	2081	1872	2081	2341	2774
0143	Ø	2185	2185	2913	3277	3496	4370	4994
0144	Ø	5462	5462	5462	8193	7283	10925	10925
0145	0	606	809	971	910	971	1213	1294
0146	0	1365	910	1092	1024	1365	1638	1820
0147	0	1820	1213	1820	2185	2081	2185	2427
0148	0	2731	2731	3641	4096	4370	5462	6242
0149	682	1092	546	364	468	546	655	672
0150	840	853	455	455	585	682	819	840

<u> </u>								
MAT'L &	1/16"	1/8"	1/4"	1/2"	3/4"	1''	1-1/2"	2''
COND.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
0151	682	546	437	728	936	1092	1311	1344
0152	0	682	546	971	1170	1365	1638	1986
0153	Ø	910	728	1213	1560	1820	2427	2913
0154	0	1365	1092	1820	2341	2731	3641	4370
0155	0	1820	1820	2913	3641	4161	5462	6474
0156	Ø	2185	2185	2185	2622	2913	3745	4370
0157	0	2731	2731	3641	4096	5462	6555	8740
0158	Ø	7283	7283	9711	14566	14566	21850	19422
0159	Q	2731	1820	2731	3277	3641	4682	5462
0160	Ø	7283	7283	9711	14566	14566	21850	19422
0151	496	390	312	520	585	693	936	1040
0162	Ø	546	437	728	819	971	1311	1456
0163	Ø	2731	5462	3641	3277	3121	3277	4370
0164	Ø	3641	7283	4855	3641	4161	4370	5826
0165	0	910	910	1213	1560	1456	1820	2427

1								
MAT'L &	1/16"	1/8"	1/4"	1/2"	3/4"	1'	1-1/2"	2"
COND.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
4								
0156	0	2731	-2731	3641	3277	3121	3277	4370
0167	0	5462	10925	10925	8193	7283	9364	10925
0158	۵۱	1092	1092	1456	1872	1748	2185	2913
0169	Ø	3641	3641	4855	4370	4161	4370	5826
0170	0	5462	10925	10925	8193	7283	9364	10925
0171	0	1365	1365	1820	2341	2185	2731	3641
0172	0	1820	1820	2427	3121	2913	3641	4855
0173	Ø	546	546	624	728	874	1092	1456
0174	364	182	218	312	Ø	Ø	Ø	0
0175	546	243	291	416	0	Ø	0	0
0176	546	546	1092	1092	Ø	0	0	0
0177	Ø	420	560	560	630	448	560	672
0178	Ø	546	728	728	819	874	1092	1165
0179	Ø	1093	1456	1456	1638	1748	2185	2330
0160	0	5463	5462	7283	6555	6242	7283	7945

MAT'L &	1/16'	1/8"	1/4"	1/2"	3/4"	1"	1-1/2"	2"
COMD.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
0181	0	2731	5462	5462	5462	5462	8193	8740
0182	0	3642	7283	7283	7283	7283	10925	11653
0183	Ω	5463	10925	10925	10925	14566	16387	17480
0184	۵	5463	10925	10925	10925	14566	16387	17480
0185	195	B1	52	60	68	72	87	97
0186	195	72	62	73	82	87	104	116
0187	195	72	6.2	73	82	87	104	116
0188	195	72	6.2	73	82	87	104	116
0189	195	55	47	55	62	66	79	88
0190	195	50	52	61	68	72	87	97
0191	195	130	156	156	156	138	187	227
0192	195	130	137	137	137	121	163	198
0193	273	151	152	182	273	242	364	364
0194	227	130	130	156	234	208	312	312
0195	546	303	455	455	546	606	728	728

							·]
MAT'L &	1/16"	1/8"	1/4"	1/2"	3/4''	1''	1-1/2"	2"
COND.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.	DIA.
CODE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE	HOLE
0196	455	242	364	364	437	485	582	582
0197	51	81	6.9	80	91	107	145	155
0198	78	78	104	156	187	249	374	499
0199	273	3 64	546	874	819	874	1092	1165
0200	364	364	437	624	728	728	936	1092
0201	55	55 (91	145	182	218	262	291
0202	137	137	218	364	546	546	819	874
0203	137	109	182	273	327	364	437	582
0204	137	109	182	273	327	364	437	582
0205	137	137	182	273	327	364	468	546
0206	51	73	121	182	21 B	242	291	388
0207	137	1.09	182	273	327	364	437	582
0208	364	312	291	437	524	582	874	1165
0209	30	26	24	364	43	48	72	97
1111	Ø	0	0	Ø	9	0	Ø	0

MOST - calculation

CODE 1004.21 DATE 2/6/84 SIGN. TLC PAGE 10-24

DRILLING

ACTIVITY

ACTIV	TTY HAND FEED DRILL BIT TO AND FRE	M W	ORKE	21EC	E (ELE	CTR	12	HA	ND D	PRILL	<u>-) </u>
CONDI												
NO.	METHOD	NO.	SEQ	JEN	CE N	ODEL					FR	TMU
,	0.1.	1		A 1	ВО	G	A	ВС	P3	A٥		60
1	PLACE DRILL TO WORKPIECE	3		Α ο	В	Go	A	Bo	P	Aο		20
2	PUCL PUTTON	<u></u>		A	В	G	A	В	P	Α		
2	PUSH BUTTON	↓	<u> </u>	<u> </u>	В	G	A	В	P	<u>A</u>	ļ	
3	REMOVE DRILL FROM WORKPIECE		+	Α	В	G	Α	В	P	A		
	ALI-TOPE DRIEL TROPE WORKS THE	-	 	<u> </u>	B	<u> </u>	A A	_ <u>B</u> _	P	A A		
		-	! 	A A	8	G G	A	B B	- <u>P</u>			
		+		<u> </u>	В	G		В	P	- - -		
İ		 	 	A	В	G	- <u></u>	 B	P	A		
		 	 	<u>∷—</u> A		G	A	B	P	A		
			+	A	В	G	A	В	Р	A		
				A	В	G	A	В	P	Α		
				A	В	G	Α	В	Р	Α		
				A	В	G	Α	В	Р	Α		
l				Α	В	G	Α	В	P	Α		
				A	В	G	Α	В	Р	_ <u>A</u>		
		<u> </u>		Α	В	G	<u> </u>	В	P	A		
		2		A 1	Во		MJ) 10	<u>^Ao</u>		30
		ļ		A	В	<u> </u>	М	<u> </u>	1	_A_		<u> </u>
				<u> </u>	<u>B</u>	G	M	<u> </u>	<u> </u>	_A_		
		╂	—	A A	В	G	M	<u>x</u>	1	_ <u>A</u>		
}		-	 	<u>^</u>	В	G	M	$\frac{\hat{x}}{x}$	-			
 -		╁	!	A	- <u>B</u>	_ _	M	$\frac{\hat{x}}{x}$	÷	A	-	
				A	8	G	M	$\frac{x}{x}$	<u> </u>	A	-	
		†	АВ	3 G	Α	ВР		A	ВР	Α		
			АВ	G	Α	ВР		A	ВР	Α		
			АВ	G	Α	ВР		A	ВР	Α		
			A B	3 G	A	ВР		Α	ВР	Α		
			A B	3 G	Α	Вь		Α	ВР	Α		
		 	АВ						ВР			<u>-</u>
		ļ	 -			B P			B P			
<u> </u>		 	A B						ВР			-
		-	A B						B P			
		 	A B						B P			
		-	A B						B P			
		1	АВ						B P			
		 				ВР			B P			
		7										
			1									
 												
TIME											1	10

MOST - calculation

1005.01

DATE

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BOLT-UP

ACTIVITY SET-UP WITH FIXED WRENCH

CONDITIONS

ALL SHIPYARD AREAS

	1	legalier.							1	
NO. METHOD	NO.	SEQUEN	CE M	ODEL	·				FR	TMU
1 0 = 7 0 = 7 7		A	BO	G ₃	A	B 0	P	A _O		60
I GET BAG OF BOLTS	2	Aı						Ao		6
2 GET BAG OF NUTS	3	A	Во	G3	A	ВС	PI	A _O	Z	12.
Z GET DAG OF AUT.	4	A						Ao		50
3 GET WRENCHES	5	A	Bo	G 1	<u> </u>	В 0	Р,	Αo	4	161
	6							A 0		61
4 GET HAMMER	7							<u> </u>		60
	8							_A _O _		65
5 COLLECT ALL OF THE ABOVE ITEMS	9							A 0	(5)	3
	10	1)Ao	(5)	200
6 PICK-4P BAG OF BOLTS	-	A .	В	G	<u> </u>	8	<u>Р</u>	A		
	+	A	<u>B</u>	G	A	B	P	A		
7 PICK-UP BAG OF NUTS	-	A	- <u>-</u> -	G	_ <u>^</u> _	В		- <u>A</u>		
	1	A	В	G	A	В	P	A		
8 PICK-UP WRENCHES			8	<u>-G</u>	A	В	P			
2 - 11 - 0 114 0 114 7	1	A	В	G	A	В	P	A		
9 PICK-4P HAMMER		A	В	G	A	В	Р	A		
IN PUT ALL TOOLS AND MATERIAL	5	Α	В	G	M	х	1	Α		
10 ABOVE IN TOOL BAG		А	В	G	М	X	_1_	Α		
		A	В	G	М	x	1	Α		
		Α_	В	G	M	X	1	Α		
	<u> </u>	A	В	G	<u> </u>	Х		A		
		A	8	G	M	X	1	A		
·		A	<u>B</u>	G	M	<u> </u>	<u> </u>	Α		
	 	A B G	<u>B</u>	G	М	<u> </u>	1 0	Α		
	 						8 P			
	- 	ABG					B P			
	}	A B G					B P			
	+	A B G					B P	-		
	-	A B G					B P			
	1	A B G					ВР			
		ABG				A	ВР	A		
		A B G	A E	3 P		Α	в Р	Α		
		A B G	A E	3 P			ВР			
·		ABG	A E	Р		A	ВР	Α		
		ABG	A E	P			3 P			
		ABG					ВР			
	 	A B G	A E	3 P		A	ВР	Α		
	 									
		L								*
TIME =									8	860

MOST - calculation

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1004.14 DATE 2/6/84

SIGN. TLC

DRILLING

PAGE 10-22

ACTIVITY	CHANGE	DRILL	BIT

	TIONS	
וטאט.	TIONS	
	_	

NO.	ALL SHIPYARD AREAS	NO.	SEQUENC	E MC	DEL					FR	TMU
1	OPEN CHUCK (25 TYRNS)	7	 				B ₀				80
		 -		В _о В	G (A;	В _О	P	A O		40
2	PLACE DRILL BIT IN CHUCK		 	<u>-</u> -	G	A	В	P	A		
3	CLOSE CHUCK (3 TURNS)		А	В	G	Α	В	P	Α		
			 	В	G	A	В	P	A		
4	TIGHTEN CHUCK (5 TAPS)	-	 	B B	G	A	B	P P	A		
	LOOSEN CHUCK (5 TAPS)	-	 	В	G	A	В	P	A		
<u> </u>	LOOSE N CHUCK (STAIS)		Α	В	G	A	В	Р	Α		
6	OPEN CHICK (3TURNS)	<u> </u>	 	В	G	Α	В	P	Α		
				B B	G G	A	B B	P	A		
7	PLACE DRILL BIT IN BAG		 	B	G	A	В	P	A		
8	CLOSE CHUCK (25 THENS)		А	В	G	Α	В	Р	Α		
0	CLUSE CITACIA (CE O TIME)			B	G	A	В	Р	Α		
				В	G	<u>A</u>	8	P	A .		
		+		<u>в</u> В	G G	A M	B X	P	A A		
		-		<u>-</u> В	G	M	x	1	A		
			А	В	G	М	х	1	Α		
				В	G	M	X	1	A		
		-		B B	G G	M	×	1	A		
				<u>B</u>	G	M	^	: -	A		
			A	В	G	М	x	1	A		
			A BGG3							(1.5)	950
		3	A 1BOG								80
		5	A BOG3								140
		6	A B B G								140 100
		8	A BOG							(L5)	870
			ABG	A B	P		A	3 P	A		
			ABG					3 P			
		-	A B G					3 P			
		 	ABG					3 P			
			ABG					Р			
			A B G	_				3 P			
		-	ABG	A B	Р		AE	3 P	A		
		-						-			
		 									
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DRILLING

PAGE /0-23

о.	ALL SHIPYARD AREAS	NO.	SEQUI	ENC	E M	ODEL					FR	TMU
1	TALLARA TETA DALL RIT		A	_	В	G	Α	В	Р	Α		
	FOWARD FEED DRILL BIT		А		В	G	A	В	Р	Α		
2	PUSH BUTTON (ACTIVATE MOTOR)		A	Ī	8	G	Α	В	Р	A		-
	LA 211 DO LINIA (12-11-11-12)	<u> </u>	A	1	8	G	Α	В	P	Α		<u> </u>
3	RETRACT DRILL BIT	<u> </u>	A		B	G	A	В	P	A	\vdash	
		 	A		8	G G	A	<u>B</u>	P	A	\vdash	
<i>'</i>	PUSH BUTTON (STOP MOTOR)		A	$\overline{}$	8	G	A	В	Р	Α		
			А		В	G	A	В	Р	A		
			A		В	G	Α	В	Р	Α		
_			A	<u>. </u>	В	G	Α	В	Р	A		
_		 	A		8	G	Α	В	P	A		
		<u> </u>	A		<u>B</u>	G	<u> </u>	В	P	Α	 	
		ļ	A		8	G	<u>A</u>	В	P	Α	 	
			A		B B	G G	A	8 B	P	A	 	
		 	A		В	G	A	<u>в</u> В	P	A	 	
		 	A		<u>В</u>	G	A	В	P	A	-	
1)	A		Вр	G,	М3		م ا		4	20
		2			Во		M		ما			4
		3	1		Во		Мз		lo		5	29
		4		'	Bo	G,	м,	Χø	l _o	A		ų
	!	<u> </u>	A		В	G	M	Х	1	A	<u> </u>	
_		 	A		В	G	M	X	<u> </u>	A	 	
	!	 	A		B	G	M	<u>x</u>	<u> </u>	A		
-						ВР	IVI		B P			
	!	 	ļ		AE			A				
-					AE			A		A	\vdash	
Ì	!		АВ						B P			
7	<u> </u>		АВ						B P			
			АВ		_				ВР			
			А В		_				ВР			
			АВ					A	ВР	Α		
			АВ	G	A E	3 P		A	вР	A		
_]			А В	G	A E	3 P			ВР			
			АВ	G	A E	3 P		AE	ВР	A		
			АВ						3 P			
			А В						ВР			
\dashv			АВ	G	A E	3 P		A	ВР	Α		
- 1			<u> </u>									
		!	<u> </u>									
_	,	1 1	i							1	ĺ	

FORM R-1458

MOST - calculation

CODE 1004./2 DATE 2/6/84 SIGN. TLC PAGE /0-20

DRILLING

ACTIVITY USE SAFETY CHAIN (MAGNETIC BASE DRILL)

	USE SAFETY CHAIN	M	AGN	<u>=</u>	116	8	AS	£ .	<u>UR I</u>	LL)	
COND	ALL SHIPYARD AREAS										
NO.	METHOD	NO.	SEQUE	ICE I	MODE	L				FR	TMU
1	GET CHAIN (10'LONG)		A,	B (, G	Α,	Во	Pο	A٥		9
1	GET CHAIN CIO DONO)	2	A	В	5 G 3	(AL) B _O	Po	Ap	(3)	7
7	UNWIND CHAIN (3 UNWINDS)	<u>3</u>	(A,							(3)2	36
	PLACE CHAIN THROUGH DRILL	5				, A6				ļ	120
3		<u> </u>	A	В	G	A	В	P	Α		
	HANDLE HOLE & PART OF SHIP PULL CHAIN THROUGH DRILL		A	B	G G	A	B B	P P	_A	-	
4		-	A	В.	G	_ <u>_</u>		P	A A		
	HANDLE HOLE & PART OF SHIP WALK TO AND FROM AREA USED	 	A	В	G		В	P			
5	TO SECURE DRILL		A	В	G		В	P			
			A	В	G	A	В	P	Â		
_	•		А	В	G	A	В	P	A		
-			А	В	G	Α	В	Р	Α		
			А	В	G	A	В	Р	Α		
			A	В	G	Α	В	Р	Α		
			Α_	В	G	Α	В	Р	Α		
			Α	В	G	A	В	Р	Α		
		,,	A	<u>B</u>	G	A	<u>B</u>	<u>Р</u>	A	(2) 2	
		4	(A ,							(3) 2	300
			A		G	M M	<u>×</u>	1	_ <u>A</u>		
			A	В	G	M	x	1	A		
			A	В	G		$\frac{\hat{x}}{x}$		A		
			А	В	G	М	×	1	Α		
			Α	В	G	М	×	1	Α		
			Α	В	G	М	х	ı	Α		
			ABG	Α	ВР		Α	ВР	A		
			ABG				Α	ВР	Α		
			ABG				Α	B P	Α		
			A B G					ВР			
	,		A B G					B P			
			A B G					B P	_		
			ABG					B P			
			A B G					вР	_	-	·
			A B G					ВР			
			A B G					3 P	_		
			A B G	Α	ВР			3 P			
			A B G				A E	3 P	Α		
			A B G	Α	ВР		ΑE	3 P	Α		
		1							<u>—</u> ,,	Ĺ	
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MOST - calculation

CODE 1004.13 DATE 2/6/84 SIGN. TL C

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DRILLING

AGE 10-21

	DRILLING		PAGE 10-21		
ACTIV	PLUG IN EXTENSION	COL	RD		-
OND	ITIONS			-	
	ALL SHIPYARD AREAS	<u> </u>			,
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TN
1	UNWIND DRILL CORD (6f#)		A1 B6 G3 (A1) BO PO A0	(4)	14
<u></u>		12	A, Bo G, A, Bo Po A o		²
2	GET EXTENSION CORD	3	A B G 3 (A) B 0 P 0 A 0	(16)	2
3	UNWIND EXTENSION CORD (50ft.)	<u>5</u>	A B 0 G 7 A42 B6 P3 A 42 A B 0 G3 (A1) B 0 P6 A 0	(17)	95 2
	PLUG DRILL CORD INTO	9	A O B O GO A BO P AO		
4	EXTENSION CORD	10	A B G G A O B O PO A		_3
5	PLUG EXTENSION IN TO OUTLET	11	A 1 80 G3 (A1) 80 P6 A0	(5)	
<u> </u>	(WALK 56 Ft. and RETURN)	12	AD BO GO AL BOPL AD	-	ļ
	UNPLUG EXTENSION CORD		A B G A B P A	 	
			A B G A B P A	 -	
7	UNPLUG DRILL CORD FROM		A B G A B P A A B G A B P A	 	
	EXTENSION CORD		A B G A B P A	 	
8	WIND UP EXTENSION CORD		A B G A B P A		
	4 5 5 6.00	1	A B G A B P A		
9	ASIDE EXTENSION CORD		A B G A B P A		
0	GET DRILL CORD	6	A42 86 G3 M3 X0 10 A4	2	
<u> </u>	GE I DAILL CORD	7	A B B G A M X X O IO A O	 	13
1	WIND UP CORD	<u> </u>	A B G M X I A	 	<u> </u>
<u>'</u>	Addition of Cours		A B G M X I A	 	
2	ASIDE DRILL CORD	-	A B G M X I A	 	
<u>-</u>		+	A B G M X I A	 	
		-	A B G M X I A	\vdash	
			ABGABP ABPA		
			ABGABP ABPA	1	
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		<u> </u>
		 	ABGABP ABPA	 	
		<u></u>	A B G A B P A B P A	 	-
			ABGABP ABPA		<u> </u>
			A B G A B B A B B A	 	 -
		+	ABGABP ABPA	╁──	
		-	ABGABP ABPA	 	
	,	1	ABGABP ABPA	1 -	
			A B G A B P A B P A		_
		1	<u> </u>	1	1

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MOST - calculation

CODE 1003.30 DATE 1/30/84

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	LAYOUT FOR DRILL	ING	2				PAGE	10	-18		
ACTIV	MANUFACTURE TEMPLA	TE								-	
CONDI											
NO.	METHOD	NO.	SEQUEN	CE M	ODEL					FR	TMU
,	MEASURE TEMPLATE MATERIAL	3	Aq	Вø	Gø	A	B0	P ₃	Aρ		40
1			A	B _	G	<u>A</u>	8	P	<u>A</u>	 	<u> </u>
2	CUT TEMPLATE MATERIALA		A	B	G	A	В	P	A		
3	PLACE TEMPLATE ON EQUIPMENT		A	B B	G	A	В	P P	A		
4	DRAW IN HOLES (4 HOLES)		A	8	G	A	В	P P	A		
5	CUT OUT HOLES (4 HOLES)		А	В	G	Α	В	Р	Α		
<u> </u>			Α	В	G	A	В	P	Α	ļ	
6	MEASURE LOCATION OF FIRST HOLE		A	<u>B</u>	<u>-G</u>	<u> </u>	<u> </u>	P	_ <u>A</u>	 	
	(2 DIMENSION)		A	B	G	A	B	P	A A	 	
			A	В	G	A	В	P	A	 	
			A	В	G	A	В	Р	A		
		-	А	В	G	Α	В	Р	A		
			Α -	В	G	Α	В	P	A		
_			Α	В	G	Α	В	Р	Α		
			A	В	G	M	×	1	Α		
			Α	В	G	М	×	1	Α		
			Α	В	G	М	×	1	Α	<u> </u>	
			Α	В	G	M	<u> </u>	1	Α	ļ	
			A	В	G	M	X	.	_ <u>A</u>	ļ	
			A A		G	M	<u>×</u>	<u> </u>	A .	<u> </u>	
			A	B	G	M	×	<u> </u>	A A	├	ļ <u>.</u>
		1	A ₃ B ₀ G							(-)	0110
		2	Az BC G	<u>```∂`</u>	36 P	Con	<u> </u>	B. B.	<u>~o</u>	(2)	1985
		4	A B B G	A	3/P.	A.P.	I A	B P.		141	340
			A B G							(4)	870
			A, BoG							(2)	870
			A B G	A	3 P	• • • • • •	A :	B P	A	1.57	
٨	THE CUT IN TEMPLATE ASSUMES		A B G	A E	3 P		Α	ВР	Α		
A	SISSORS ARE USED. A 2/3" CUT WITH		A B G	A E	3 P		Α	ВР	Α		
	A 68" PERIMETER YIELDING 102 CUTS		ABG					B P			
	CS4 WITH A PREPUENCY OF (3.12)		A B G					ВР			
			A B G					3 P		<u> </u>	
	DOTTO DE DENUME		A B G					3 P		 	
	REFERENCE DRAWING		A B G					B P		 	
	GD185721		7 3 6			LUAIE	5 To				4945
			 				ER				1236
											1236
TIME	•								l	12	.36
FORM	I R-1458										

MOST - calculation

1004.11 DATE 2/6/84

DRILLING

SIGN. TLC PAGE 10-19

ONDITIONS DRILL (MAGNETIC BASE DRILL)

	ALL SHIPYARD AREAS										
NO.	METHOD	NO.	SEQUEN	CE M	ODE	_				FR	TI
_			А	В	G	A	В	Р	Α		_
1	MOVE DRILL INTO POSITION		А	В	G	A	В	Р	Α		
	0		А	В	G	Α	В	P	Α		_
2	RUN DRILL BIT DOWN & UP		A	В	G	A	В	Р	Ā		
	FINAL ADJUSTMENT OF DRILL		А	В	G	A	В	P	Α		
<u>3_</u>	LOCATION		A	В	G	A	В	Р	A	 -	
	TURN ON AND OFF MAGNET		A	8	G	A	<u>-</u>	P	A		
4			A	В	G	Α	В	Р	Α		
		1	A	В	G	A	В	Р	Ā		
			A	В	G	A	В	P	Α		
-			A	В	G	A	В	P	A		
1			A	В	G	A	В.	P	A		
		 	A		G	A	В	Р	A		
1	,		A	В	G	A	В	P	A		
		一	А	В	G	A	В	Р	A		
			A	<u> </u>	G	A	В	P	A		
			A	В	G	A	В	P	A		
			А	В	G	A	В	P	A		
		T			GZ) Xp		Ao	(2)	2
-		2	(A,						Ap)	(4)2	4
		<u>2</u> 3	Α,			M ₃				11/-	
		4	Aj			м,		وا		2	
			Α	В	G	М	Х	1	A		_
		_	A	В	G	М	х	1	Ā		
			A	В	G	М	×	1	A		_
		_	A	8	G	М	X	1	A		
			A B G	Α	ВР		Α	ВР	A		
į			A B G	Α	ВР		Α	ВР	Α		
					ВР		Α	ВР	A		
		\vdash	A B G	Α	ВР		Α	8 P	Α		
			A B G					ВР		1 1	
			A B G					ВР			
			A B G				A	B P	Ā		
		 -	A B G					ВР			
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MOST - calculation

1003.10 DATE 1/30/89

SIGN. TLC

LAYOUT FOR DRILLING

PAGE 10-16

001151	" WITH OUT TEMPLATE		•		
CONDI	ALL SHIPYARD AREAS				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
,	CET MARKER	1	A 1 Bo G3 A1 Bo Po Ao		50
1	GET MARKER	2	A B o G 3 A B o P 3 A o	ļ	80
2	REMOVE CAP FROM MARKER	7	A, BO G3 A, BO P3 AC	_	80 40
3	MEASURE DIMENSIONS		A B G A B P A A B G A B P A		
4	MAKE MARKS		A B G A B P A		
5	CENTER PUNCH HOLE		A B G A B P A		
6	CIRCLE HOLE WITH MARKER		A B G A B P A A B G A B P A		
7	PUT CAP ON MARKER		A B G A B P A A B G A B P A		
-1			A B G A B P A	-	
8	ASIDE MARKER		A B G A B P A A B G A B P A		
			A B G A B P A		
			A B G A B P A		
			A B G M X I A		
			A B G M X I A	-	
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			ABGMXIA		
			A B G M X I A	1/21	-
		3	A, BoG3 A DBO (P, A, M32) A, Bo P3 AD A DBO GO AO BO (P, A, R3) A, BO P, A O	(2)	760
		5	A1B0G3A1B0B F6 A1B0P1 A0	(2)	120
		6	A BOG A BOP RO ADBOP AD		100
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA ABGABP ABPA		
			ABGABP ABPA ABGABP ABPA		
			A B G A B P A B P A		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
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TIME	=			13	90

MOST - calculation

1003.20

DATE 1/30/84

SIGN. TLC

LAYOUT FOR DRILL	ING	PAGE 10-17	
WITH TEMPLATE			
TIONS			
ALL SHIPYARD AREAS			
METHOD .	NO.	SEQUENCE MODEL	FR TM
PLACE TEMPLATE ON FOUNDATION) N	A O B O G O A 3 B 6 B A O	1
	<u> </u>	A3 B6 G2 AB BO PD AZ	Į.
CENTER PUNCH HOLES-(4 HOLES) 4	A, Bo G3 A, Bo P3 AO	8
	9	A ₁ B ₀ G ₃ A ₁ B ₀ P ₃ A ₃	
GET MARKER	7	A B G A B P A	
		A B G A B P A A B G A B P A	
UN CAP MARKER		A B G A B P A	
	_	A B G A B P A	
MARK HOLES - (4 HOLES)		A B G A B P A	
0 8440450		A B G A B P A	
CAP MARKER		A B G A B P A	
PUT-UP MARKER		ABGABPA	
1 W 1 W 1 P 1 P 1 P 1 P 1 P 2 P 2 P 2 P 2 P 2 P		ABGABPA	
		A B G A B P A	
		A B G A B P A	
		A B G A B P A	
		A B G A B P A A B G M (X I A	
	<u> </u>		
		A B G M X I A A B G M X I A	
		A B G M X I A	
		A B G M X I A	
		A B G M X I A	
		A B G M X I A	
		ABGMXIA	
		A3 B6 G3 A3 B6 (P, A, F6) A, BD P, A0	(4) 5
	5	A B B G A B B (1 A R3) A B B P A	(4) 24
		ABGABP ABPA	
		A B G A B P A B P A	
	`	A B G A B P A B P A B G A B P A	
	1	ABGABP ABPA	- -
		ABGABP ABPA	Ar.
		ABGABP ABPA	
		ABGABP ABPA	
		ABGABP ABPA	
•		ABGABP ABPA	
REFERENCE DRAWING		ABGABP ABPA	
GD 185721		ABGABP ABPA	
		4 HOLES TOTAL	129
		STO, PER HOLE	32.

TIME =

MOST - calculation

CODE 1001.231 DATE 1/13/84 SIGN. TLL

		TAR ROTTOR CATION	•					SIGN			,	
		JOB PREPARATION						_		7-14		
ACTIV	SEC	URE DRAWINGS FROM	REPR	ODUC	Tio	N	SE	R U	CE	·s		
ONDI	TIONS			**								
		SHIP YARD AREAS	1								T _	T
NO.	METHOD	OUT RSR FORM	NO.	SEQUEN							FR	TMU
1	(1 WO		6	A,	<u>В</u> о	G I	A	В о	P _O	A O	-	34
		OUT RSR FORM		A	8	G		В	P	A -	1	
2	(2101	6175)		A	В	G	A	В	P	A		
3	FILL O	GITS) UT RSR FORM		А	В	G	Α	В	Р	A		
<u> </u>	(1516	NATURE) HT RSR FORM		Α	B	G	A	В	P	Α	<u> </u>	
4	FILL OF	HT RSR FORM		A	8	G	<u> </u>	В	P	<u> </u>	ļ	
	(2 0A	FOR DRAWING (3MINS)	_	A	В	G G	A	В	P P	A A	<u> </u>	
5	WALL	FOR DRAWING (SMILL)	-	A	В	G	A	B	P	A	 	
•	RECI	EVE PRAWING		Ā	В	G	_ <u>_</u>	В	P	Ā	 	
6				А	В	G	A	В	Р	A		
				Α	В	G	Α	В	Р	Α		
				Α	В	G	Α	В	Р	Α_	ļ	
}				A	В	G	Α .	В	P	<u>A</u>	1	ļ
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				A	В	G	М	Х	1	Α		
				A	В	G	М	X	1	Α		
				Α	В	G	M	X	<u> </u>	<u> </u>		
				A	B	G	M	×	1	A	 	
				A		G	M	×	÷			
				A	В	G	М	X	1	A		
			1	ABGG	3 ^A 1	Bo P/	RG	Α,	B _O P	Ao		140
			2	Ao Bo G	o Ao	B _D P _D	Ruz	Ao	Bo Pr	Ap		420
			3	A _p B _p G								160
			4	An Bo G			RIL				۷	320
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				ABG					ВР			
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MOST - calculation

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SIGN. TLC

PAGE 10-15

AREA TRAVEL

ACTIVITY TRAVEL FROM MODULE 2 STAIRS TO AMR #1

CONDITIONS	
CC14C111C140	

MODULE AREA

	:MODULE AREA										-	
NO.	METHOD	NO.	SEQU		-		-				FR	TMU
1	TRAVEL UP 24 STAIR STEPS	<u></u>				Gρ				A _O _	ļ	. <i>47</i>
-		2								A 0		-42
2	THROUGH MANHOLE	3	1	~32 ^0		Go					H	32
	16 STERS THRY ENGINE KOOM NO. 1	7	_			Go				Ao	 	42
3		-	_	<u> </u>	В	G	A	В	Р	Α		
	GET ON AND OFF LADDER			۹.	8	G	A	В	Р	Α		
1				4	В	G	Α	В	Р	A		
<u>.</u>	UP LA ODER 10 RUNGS		-	٩	В	G	Α	8	P	Α		
			,	<u> </u>	В	G	Α	В	Р	Α		ļ
6	THROUGH MAN HOLE		-	٩	В	G	Α	В	Р	Α		
				<u> </u>	<u>B</u>	G	<u> </u>	B	P	<u>A</u>		
7	21 STEPS TO WORK AREA		-	Α	8	G	A	_		_A	<u> </u>	
-+				<u>A</u>	B	G G	A	8 B	P P	A		
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IMBALLS Shipbuilding

MEET - calculation

1001,22 DATE 1/13/84 SIGN. TLC.

JOB PREPARTION

JOB "RETAKTION	,							jE 	i <i>0-1</i>		
CTIVITY AVERAGE ADDITIONAL TO	08	50	Z.,	2	23	Tio	W				
ONDITIONS											
ALL SHIP YARD AGEAS										~~ , ~ .	Prop. 10.2.2
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TIPM (2008 100 F.21) CECINO TOPLS FROM TIPLE EXIS			<u> </u>	_ <u>=</u>		<u>A</u> _					
2 (6005 1001.121)	}		A	8	G	A .	_ <u>5</u>			+-	┷-
- 176008 1001.121)	-		A	<u> </u>		<u>A</u>		<u>Р</u>	-	-	·
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MOST - calculation

CODE 1001.23

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DATE 1/13/84

SIGN. 7LC

JOB PREPARATION						PAGE	10	7 - /2	3	
ACTIVITY COMPLEX ADDITIONAL TO	B	PREPA	ARA	TIO	N					-
ONDITIONS						-				
ALL SHIP YARD AREAS		T								
NO. METHOD	NO.	SEQUEN							FR	TMU
AVERAGE ADDITIONAL JOB PREYARA-	5	Α,	Bo	G	Α,				3	12
TION (CODE 1001.22)		Α	В		A	8	P	A		·
SECURE PARTS FROM WAREHOUSE		A	В	_	A	В	P	Α		
Z (CODE 1001.132)		Α	8		Α	В	<u>P</u>	<u> </u>		
3 SECURE PRAWINGS FROM REPRODUCTION		A	В		<u> </u>	В	Р	_ <u>A</u>		<u>-</u> _
SERVICES (CODE 1001.231) READ AN ADDITIONAL COMPLEX		A	В		<u>A</u>	<u>B</u>	P	<u> </u>		
		A	В		<u> </u>	В	P P	A		
4 DRAWING		A	8		<u>A</u>	<u>B</u>		A		
5 TURN PAGES		Α	8		<u> </u>	B	P	<u> </u>		
J		A_	В		<u>A</u>	<u>B</u>	P	<u> </u>		
		A	В		<u> </u>	8	P			
		Α Α	В		<u> </u>	B. B	P	<u> </u>		
		<u> </u>	8	***	A		Р	Α		
		A	В		<u> </u>	8	Р	_ <u>A</u>	ļ	
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		Α_	B		Α	В	Р	Α		
! :		A	В		<u> </u>	В	P	<u>A</u>		
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TIME =

MOST - calculation

Shipbuildin	9		SIGN. TL		
	JOE PREPARATION		PAGE 13-	10	
ACTIVITY SE	CURE MATERIAL REDUISITION	TORIN FROM PRODUC	TION C	311760	ے
	L SHIPYARD AREAS				
NO. METHO	OD O	NO. SE QUENCE MODEL		F:	TML!
REA	O 9 WORDS FROM BILL	7 A E G A	En to A	2	30
		A B G A	A 2 S		ļ
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3 WRIT	E 49 2161TS ON REPUBLITION	A B G A	в Р С		1
4 12817.	E 2 DATES DA' REQUISITION	A S G A	<u> </u>		!
سور قديد	E 1 SIGNATURE	A 5 G A	E P A		<u> </u>
9 !		A B G A	3 A		
& READ	33 NO.S FROM BILL	A B G A	<u> 5 _ A</u>		
2015	T EMPLITER RECIEVES REQUIR	TAR A E G A	8		<u></u>
	M PROFICTION CONTROL	I A B G A	8 P A		<u></u>
	LOYEE	A 5 G A	В Р д		
		I A B G A	BFA		
!		A B G A	වූ ව <u>උ</u>	<u> </u>	<u> </u>
		i ABGM	B P A		اب ا
		A B G M	× 1 A		
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		1 4 B G M	X I A	_ !	· · · · · · · · · · · · · · · · · · ·
		A B G M	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		<u> </u>
1		; A B G M	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		<u></u>
		A E G M	X		
		1 A B G A B B To	A: 8, 1, Ac	· i	150
		2 14, 5, 5, A, B, P, (figu			
		3 Ap Br. Gr. 20 Bo Colfsy			
		14 Ao Fr G to Pr Po (Nic)			
		5 14, 5, G, A, E, B, KB	- 10 50 10 10 - A > So So Ao		160 280
		A B G A B P	ABPA	<u> </u>	
		IABGABP	ASPA		
		ABGABP	AABA		
; 		ABGABP	APPA	_	
		A B G A E P	A B P A	- ;;	
 		A B G A B P	A D P A		
		ABGABP	АВРА		
					
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MOST - calculation

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PAGE 10-11

JOB PREPARATION

SIMPLE ADDITIONAL JOB PREPARATION

10.	METHOD		SEQUEN	CE	MODEL					FR	TMU
	GET AND PUT-UP TOOLS (CODE 1001.111)	<u> </u>	А	В	G	A	8	P	A		
	1		A	В	G	A	В	Р	Α		
-			A	В	G	A	В	Р	А	—	
	READ TIME CARD		A	В	G	A	В	Р	A		
	Vicania and and and and and and and and and an		A	В	G	A	8	P	A		
	SIGN TIME CARD	<u> </u>	A		- G		В	P	A		·
	3167-11.13		A	 B	G	A	В.	P	A		ſ
	· •	<u> </u>	A	В	G		В	P	A		(
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i			A					P			
ļ			A A	8	G	<u>A</u>	8	P	A		
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ļ		 '	A	В	G	<u> </u>	<u>B</u>	P	Α	 	
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1	, ·	<u> </u>	A	8	G	A	В	P	Α	 !	
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			A B G	A	ВР		A	ВР	A		
			A B G	Α	ВР		A	в Р	A		
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DATE 1/13/84

SIGN. TLC PAGE 10-3

JOB PREPARATION

ACTIVITY ADDITIONAL TIME FOR READING COMPLEX DRAWING

o.	ALL SHIP YARD AREAS	NO.	SEQUEN	CE M	ODEL		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			<u> </u>	Lrau
	TURN PAGE (3PAGE DRAWING)	L	l A,	Bø	G,	A	ВО	P,	ĄΩ	3	12
		4	A	Во	G,	Α,	Bo	P	A 0	2_	1 8
•	READ COMPLEX DRAWING (G)1870C2)		A	8	G	Α	В	P	A		
	(2262 WORDS AND DIGITS)		A	В	G	A	В	P	Α	1	<u> </u>
	READ AVERAGE ORAWING	<u> </u>	A	<u>B</u>	G	Α	8	P	Α	<u> </u>	
	0.00.00	 	I A	B	G G	A A		P	<u>А</u> А	 	ļ
	TURN PAGE-AVERAGE DRAWING	 	A	E E	G		8	Р		1	<u></u>
	DIFFERENCE BETWEEN COMPLEX		A	В	G	A	В	P	A	1	
,	AND AVERAGE DRAWNS READING	 -	A	В	G	A	B	P	Α		
	AND RVERHOE WOUND NEADING	1	A	В	G	A	8	P			
			A	В	G	А	В	P	A		
			A	В	G	А	8	Р	А		
			Α	В	G	А	В	Р	Α		
			А	В	G	A	В	Р	Α		
			А	ņ	G	Α	В	P	A		
		<u></u>	A	В	G	А	8	P	Α		İ
		<u> </u>	Α	В	G	Α	В	P	А	i	
			A	В	G	М	X	<u> </u>	A		
			A	В	G	М	X	1	A		
		<u> </u>	, A	8	G	M	X	<u> </u>	<u> </u>		
		!	i A	3 B	G	M Mi	X	1	A A		
			A	8	G	м	X	÷	A		
			A	8	G	M	X	1	Α		
			A	В	G	М	×	1	A		
		2	A, BOG,	Α, Ε	20 Pa	77.) A,	B _M P ₂	A _O	(1985)	18926
			IA, B, G								15160
			ABG	Αí	3 P		A	в Р			
			A B G	Á E	3 P		A E	3 P	A		
			ABG	A E	3 P		Αi	ВР	A		
			ABG					3 P			
			A B G					3 P			
		 	ABG					ВР			
			A B G					3 P			
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			A B G					3 P			
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DATE 1/13/84

SIGN. TLC PAGE 10-4

JOB PREPARATION

ACTIVITY SECURE PARTS FROM WARE HOUSE

NO.	METHOD	NO.	SEQ	UEN	ICE N	MODEL					FR	TMU
	SECURE MATERIAL REQUISITION FORM	2		A	В,	, G _O	Aı	В,	Ρ,	Α,		3 /
1	FROM PRODUCTION CONTROL (CODE 1001-1321)	4	i			, G /						4
	FROM PRODUCTION CONTROL (CODE 1001.1321) SUBMIT REPUISITION TO WAREHOUSE			Α	В	G	A	В	Р	Α		
2	EMPLOYEE			Α	В	G	Α	В	Р	A		
	WAIT (SMINS)			A	В	G	Α	В	P	Α		
3				Α	8	G	Α	В	Р	Α		
'1	RECIEVE PARTS			Α	8	G	A	В	Р	Α		,
<u> </u>				<u>A</u>	В	G	Α	В	P	<u> </u>		ļ
				Α	В	G	<u> </u>	В	P	<u> </u>		
				<u>A</u>	<u>B</u>	G	_ <u>A</u> _	В	P	Α		 ,
				A A	<u>B</u>	G G	_ <u>A</u> _	B B	P P	A		
				A	B B	G	A	В	<u></u>	A		
			-	A	В	G	A	8	P	A		
		-		A	 B	G	A	В	Р	A		
				A	В	G	A	В	Р	Α		
				Α	В	G	Α	В	Р	Α		
•				A	В	G	Α	В	Р	Α		
				Α	В	G	М	X	1	Α		
				Α	В	G	М	Х	1	Α		
			ļ	Α	₿	G	M	X	!	Α		
				Α	В	G	M	X	. !	A		-
				<u>A</u>	<u>B</u>	G	M	X	 	A		 .
				A	8 B	G G	M	×	1	Α		
				^	_ <u></u>	G	M	`	÷	A		
				3 G		ВР			ВР			
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						ВР	-	Α	ВР	Α 、		
			A E	3 G	Α	ВР		Α	ВР	A		
			ΑВ	G	Α	ВР		Α	ВР	Α		
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				_		ВР		Α	ВР	Α		
			_		_	ВР			В Р			
	•	-	_			ВР			<u>в Р</u>			
						B P			B P			
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CODE 1001.122

DATE 1/13/84

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TLC 10-6 JOB PREPARATION PAGE ACTIVITY ADDITIONAL TIME FOR READING AVERAGE DRAWING CONDITIONS ALL SHIPYARD AREAS METHOD NO. SEQUENCE MODEL FR READ AVERAGE DRAWING (1811 WARDS Bo G, A, Z 80 AND DIGITS) (GD 185286) Α G Α В G В TURN PAGE G В G В Α Α READ SIMPLE DRAWING Α DIFFERENCE BETWEEN AVERAGE MO G Р SIMPLE DRAWING READING G Α G В G Α В Α Α В В G Α В G В Α Р G Α В В Α В Α G Α 8 G Α В Α G В Α G M х ŧ Α В G В G М Х 1 Α X 1 А А В G M G Х G Х G G 1 (A, BOG, A, BO & (Tio) A, BOP3 AO (150.9) 15170 (A, B, G, A, B, P, (Tin) A 180 P3 AO ABGABP ABPA B G A B P ABPA ABGABP ABPA ABGABP ABPA ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA ABPA ABGABP ABGABP ABPA (N0.1) - (N0.3)11120

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JOB PREPARATION

PAGE 10-7

ACTIVITY COMPLEX INITIAL JOB PREPARATION

 o.	ALL SHIP YARD AREAS	NO.	SEQU	ENC	E M	ODE	Ļ				FR	TM
	AVERAGE JOB PREPARATION		А		8	G	Α	В	Р	A		<u> </u>
	(CODE 1001.12)		A	,	В	G	A	8	Р	A	1	
_	(CODE 1001.12) RECIEVE INSTRUCTIONS		A	١	8	G	A	В	P	Α		
	LE MINE ADDITIONAL)		A		В	G	A	В	Р	А	1	
	(5 MINS. ADDITIONAL) ADDITIONAL TIME FOR READING		A		В	G	A	В	Р	A	+	†
)	CAMPIET DAMME (CAMPING)		A	_	8	G	A	В	P	A	 	_
_	COMPLEX DRAWING (CODE 1001.131) SECURE PARTS FROM WAREHOUSE		A	•	8	G	A	В	P	A	+-	
	(CODE 1001.132)		A		8	G	A	В	Р	A	+	
	(CODE 1001.132)		A		В	G	A	В	P	A		╆┷
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			Α		В	G	A	В	P	A		
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			Α	1	8	G	М	X	1	Α		
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			А В	G	Α	ВР		Α	B	PA		
			A B	G	Α	ВР		Α	B	РΑ		
			АВ	G	Α	ВР		Α	В	P A		
			А В	G	Α	ВР		Α	В	PA		
			A B					Α	В	PA		
			A B					Α	B !	РΑ		
			ΑВ						В			
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	JOB PREPARATION						PAG	ΞE	10-	4	
1CTIV	TITY AVERAGE INITIAL JOB PA	0 = 0	'A	-10	A I						
:ONDI		CET	ואאו	10	<u>~</u>						
	ALL SHIP YARD AREAS		,								
NO.	METHOD	NO.	SEQUEN							FR	TMU
,	SIMPLE JOB PREPARATION .		A	В	G	A	В	P			ļ
1	(CODE 1001.11) RECIEVE INSTRUCTIONS		A	B		A	8	P		-	
2	RECIEVE INSTRUCTIONS		Α_	B	G	A	B	P P		+	-
	(2 MINS, ADDITIONAL) SECURE TOOLS FROM TOOL CRIB		A	В	G	A	В	P			-
3	(1005 1001 121)		A	В	G	A	В	- P			-
	(CODE 1001.121) ADDITIONAL TIME FOR READING AVERAGE DRAWING(CODE 1001.122)		A	8	G	A	В	P			
4	AVERAGE DRAWING (CODE 1001.122)		А	В	G	А	В	P	А		
			А	В	G	А	В	P	Α		
			А	В	G	Α	В	P	Α		
			А	В	G	Α	В	Р			\bot
			Α_	В	G	Α.	В	P		 	<u> </u>
			A	В	G	A	В	Р		+	
			A	8	G G	A	8 B	P P		+	
			A	В	G	A	В	<u>.</u> Р		+	
			A	В	G	A	В	P			
]		А	В	G	А	В	P			
			А	В	G	M	Х	1	Α		
			А	В	G	M	Х	1	А		
			А	В	G	М	Χ	1	Α.		
			Α	В	G	М	X	- 1	A		
			Α_	8	G	M	×	l i			
			A	B B	G	M	×	<u>'</u>	A	 	
			A	В	G	М	×	<u> </u>	A		
			A B G				Α	В	PΑ		
			A B G	Α	ВР	-	Α	В	PΑ		
			A B G	Α	ВР		Α	В	РΑ		
			A B G	Α	ВР		Α	В	РΑ		
			A B G						PΑ		
			A B G						PA	1	
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10-5

JOB PREPARATION PAGE

ACTIVITY SECURE TOOLS FROM TOOL CRIB

ο.	ALL SHIP YARD AREAS	NO.	SEQUEN	FR	.TMD						
		3	Α,	Во	G	Α,	Во	Po	Aσ		-
	SIGN TOOL LOAN FORM		А	В	G	Α	8	Р	Α		
			А	В	G	Α	В	Р	Δ		
	WAIT (9.1 MINS.)		Α	В	G	Α	В	-P	Α		
			А	В	G	Α	В	P	Α		
	GET TOOLS		А	В	G	Α	В	Р	Α		
_			А	8	G	Α	В	Р	Α		
			А	В	G	Α	В	Р	Α		
		А	В	G	Α	В	P	Α			
			А	В	G	Α	В	Р	Α	T	
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			· A	В	G	A	В	P	A		
			А	8	G	A	В	Р	A		Ħ
			А	В	G	A	В	P	Α		
			A	В	G	A	В	Р	A		
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JOB PREPARATION

PAGE 10-2

ACTIVITY SIMPLE INITIAL JOB PREPARATION

CONDI	ALL SHIP YARD AREAS										
NO.	METHOD	NO.	SEQUEN	ICE N	IODE	_				FR	TMU
			А	В	G	Α	В	P	Α		
1.	RECIEVE INSTRUCTIONS (3 MINS.) READ BILL OF MATERIAL		Α	В	G	Α	В	Р	Α		
	READ BILL OF MATERIAL		A	8	G	Α	В	Р	Д		
2.	(2501-218-1) (210 WORDS AND MGITS) READ SIMPLE SKETCH (GD185202)		Α_	В	G	A	В	P	<u> </u>		
3,	READ SIMPLE SKETCH (GD185202)		A	В	G	Α	В	P	A		
J,	(478 WORDS AND DIGITS)		Α_	В	G	<u>A</u>	<u>B</u>	P P	<u>А</u>	-	
7	GET TOOLS FROM TOOL BOX		A	8	G G	A	B	P	_ <u>~</u> _	1	
	(CODE 1001.111)		A	В	G		В	P	Ā		
5.	PUT TOOLS IN TOOL BOX		A	В	G		В	P	A		
	(CODE 1001.111)		A	В	G		В	P		1	
6.	READ TIME CARD		A	В	G	A	В	P	A		
	Harra Maria	l	A	В	Ğ	A	В	P	Ā		
7.	SIGN TIME CARD		А	8	G	A	В	P	A		
<u> </u>			А	В	G	А	В	Р	Α		
			А	В	G	A	В	P	Α		
			А	В	G	Α	В	Р	Α		
			Α	В	G	Α	В	P	А		
			А	В	G	М	х	1	Α		
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			Α	В	G	M	X	I	Α		
			A	В	G	М	×		A		
			Α	В	G	M	Х	1	A		
			A	В	G	M	X	1	Α	100	1000
		2	A, BoG								1820
		3	A ₁ B ₀ G							(37.8)	4050
		6	A B C								80
		7	A B G							 	220
1			A B G					B P			
			A B G					ВР		 	
			A B G					ВР		+	
		 	A B G					ВР		 	
			ABG					БР		+	
-			A B G					ВР		1	
			A B G					ВР			
			A B G					ВР		1	
		 	A B G	Α	ВР		A	ВР	A	1	
		1				******			-	T	5000
		4									440
		5	1								440
I	1		1								

TIME=

MOST - calculation

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JOB PREPARATION

PAGE 10-3

NO.	ALL SHIP YARD AREAS	NO.	SEQUEN	CE M	ODEI					FR	TMU
		1	1		G ₃	_	Во	P3	Ao	<u> </u>	2.0
1	PLACE KEY IN LOCK	4	Α,		G3		_	_			
2	TURN KEY AND REMOVE LOCK	5 8			G _O				A _O		20 20
3	OPEN AND CLOSE DOOR		А	В	G	Α	В	P	Α		
	GET TOOL BAG AND PLACE ON		A	8	G G	A	8 B	P P	A		
4	SHOULDER OR PLACE IN LOCKER)		A	В	G	Α	В	P	Α		
5	PLACE LOCK IN POSITION		A	B B	G G	A A	B B	P	A		-
,	A • • • • • • • • • • • • • • • • • • •		A	В	G	Ā	8	P P	<u>A</u> A		
6	CLOSE LOCK		Α	В	G	A	В	Р	A		
7	REMOVE KEY FROM LOCK		A	8	G	A	В	Р	A		
			A	B B	G G	A	8 B	P P	A A		
8	PLACE KEY IN POCKET		A	В	G	A	В	P	A		-
			Α	В	G	Α	В	P	Α		
		2	A	В	G_	Α	В	P	Α		
		3	A ,		G o				_		20
				B _O	Go	Мз М,					5
		6 7	A	Bo	G,	-	×o				30
			A	В		M	Х	1	A		
			A	B 8		M	×	<u> </u>	A		
			A	В		M	x	1	A		
			A B G	A E	3 P		A E	3 P	А		
			ABG				A E				
l			ABG	A 8				3 P			
			A B G				A B	P			
			A B G				A B				-
			A B G				АВ				-
			ABG				A B				
	}		A B G A B G				A B				
			ABG				A B			<u> </u>	
			ABG				АВ				
			A B G					Р			
_			ABG	A B	. Р		АВ	P	A	-	
ľ	•										
							-				
					-						

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SECTION 9 PROCESS DATA

FACE MILLING PROCESS TIME FORMULA DERIVATION

OPERATION	FORMULA	SYMBOLS
GIVEN : t=L/fm ¹	t= L/fro	<pre>Dm=Dia. of milling cutter (inches) fm= feed rate (in/min.) ft= feed rate (in/tooth</pre>
SUBSTITUTE: fm = ftxT x RPM ¹	t= L/(ft xT xRPM)	<pre>K= Minute to TMU con- version factor (TMU~ per rein)</pre>
SUBSTITUTE: RPM= Vc/.262 Dml	t = (.262 xDmx L)/" (ft x T.x Vc)	<pre>L= Length of cut (inches) n= Number of cuts P= Process time (TMU's) RPM= Spindle Speed (rev/min.)</pre>
MULTIPLY: Include frequency factor (n)	t= (.262xnxDmxL)/ (ft x T X Vc)	<pre>t= Process time (min.) T= No. of teeth in milling cutter</pre>
SUBSTITUTE: t = P/K	P=(.262x Kxnx DmxL)	/(ftxTxVc)
SUBSTITUTE: K = 1667	P= (.262 x 1667 x nxDmx	L)/(ftx TxVC)
MULTIPLY: 1667 X .262 = 437	P= (437 x n x Dmx L)/(ft x	T x Vc)

^{*}Machining Data Handbook," Metcut Research Associates Inc. (1966) p. 507.

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[

SECTION 10 DATA SYNTHESIS AND BACK-UP

This section contains all of the detailed MOST standard calculation forms which are the foundation for the unit and operation standards. The standards are listed in code number order. Below is an Index showing how this section is constructed .

INDEX

CODE NUMBER	TITLE	PAGE NO.
1000 1001 1002 1003 1004 1005	Operation Formulae Job Preparation Area Travel Layout for Drilling Drilling Bolt-Up	10-2 10-15 10-16 10-19 10-25
2000 2001 2002 2003	Machining Units Five Inch Gun Mount Facing Main Engine Pads Face Milling Stern Tube Boring	10-28 10-38 10-52
3000 3001 3002 3003 3004 3005 3006 3007 3008 3009 3010 3011	Installation Units 'Waste Heat Boiler Air Conditioning Plant Chill Water Pump High Pressure Air Dehydrator Boat Handling Winch Vaneaxial Fan Sewage pump Bridge Crane and Rails Convection Oven Hoist and Monorail Cooling Coil	10-80 10-95 10-105 10-110 10-125 10-136 10-143 10-149 10-162 10-168 10-182

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PAGE

SECTION 9 PROCESS DATA

MAIN ENGINE PADS FACE MILLING PROCESS TIME CALCULATIONS (CONTINUED)

MAIN ENGINE PADS MACHINING PHYSICAL CHARACTERISTICS:

WIDTH OF PADS (INCHES PAD #1 - 19 3/4 PAD#5 - 15 PAD #2 - 19 3/4 PAD #6 - 15 PAD#3 - 15 PAD#7 - 15 PAD #4 - 15 PAD #8 - 15	(L) LENGTH OF CUT* (INCHES) PAD #1 - 69.5 PAD #56125"5" PAD #2 - 69.5 PAD #6 -75.0 PAD #3 -75.0 PAD #7 - 37.0 PAD #4 - 38.0 PAD #8 - 68.125
NO. OF ROUGH AND FINISH CUTS REQ'D PAD #1 - 10R+3F	AVG. DEPTH OF MATERIAL REMOVED (INCHES) PAD #1383
(Dm) DIAMETER OF CUTTER - 8.0 inches	(T) NO. OF TEETH IN CUTTER - 16 teeth

FACE MILLING FORMULA**:

 $P = (437 \times n \times Dm \times L)/(ft \times T \times Vc)$

VARIABLES

Dm represents diameter of milling cutter in inches.

ft represents feed rate in inches/tooth L represents length of cut in inches

n represents number of cuts

represents number of teeth in cutter

 $V_{\text{\tiny c}}$ represents cutting speed in feet/rein.

*NOTE: Includes cutter overrun.

**See page 9-53 of this manual.

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SECTION 9 PROCESS DATA

FACE MILLING PROCESS TIME CALCULATIONS (CONTINUED)

CALCULATIONS:

	ROUGH CUTS PADS #1-2
FORMULA	P= (437 xnxDmx L)/(ft :i T x Vc)
SUBSTITUTION	P= (437 X 10x8x 139)/(.014x 16 X 530)
PROCESS TIME	P= 40,932 TMU'S
	ROUGH CUTS PADS #3-8
FORMULA	P= $(437 \times n \times Dmx L)/(ft \times T \times Vc)$
SUBSTITUTION	P= $(437 \times 7 \times 8 \times 361.25)/(.014 \times 16 \times 530)$
PROCESS TIME	P= 74,465 TMU'S
	FINISH CUTS PADS #1-2
FORMULA	P= (437 x n x Dmx L)/(ft x T x Vc)
SUBSTITUTION	P = (437x3x8x 139)/(.012x 16 x705)
PROCESS TIME	P= 10,770 TMU'S
-	
	FINISH CUTS PADS #3-8
FORMULA	P= $(437 \times nxDmx L)/(ft \times T \times Vc)$
SUBSTITUTION	D- //27 V 2 0 261 2E)// 012 16 70E)
	P= $(437 \times 2 \times 8 \times 361.25)/(.012 \times 16 \times 705)$
PROCESS TIME	P= (437 X 2 X 6 X 361.25)/(.012 X 16 X 705) P= 18,660 TMU'S

PROCESS TIME:

		TOTAL PROCESS
		TIME REQUIRED
TOTAL ROUGH	TOTAL FINISH	AT RECOMMENDED
CUTS IN TMU'S	CUTS IN TMU'S	CONDITIONS IN TMU'S

TOTAL FOR ONE ENGINE ROOM'S

MAIN ENGINE PADS 115,397 29,430 144,827

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SECTION 9 PROCESS DATA

FACING PROCESS TIME

FORMULA DERIVATION

<u>OPERATION</u> <u>FORMULA</u> SYMBOL

Given: t = L/fm Dt=Dia. of workpiece(inches

t= L/fml fm=feed rate (in/min.)

Substitute: $t=L/(fr \times RPM)$ fr=feed rate(in/rev.)

fm= fr x RPM K=Minute to TMU conversion

factor (TMU's/Min.)
L=Length of cut (inches)

n=Number of cuts

Substitute: t=(.262 x Dt x L)/(fr x Vc) P=Process time (TMU'S)

RPM=Vc/.262 Dt¹ RPM=Spindle speed (rev./min

t=Process time (minutes)
Vc=Cutting Speed (ft./min.)

Multiply: $t=(.262 \times n \times Dt \times L)/(frx \ VC)$

Include frequency

factor (n)

Substitute: $P=(.262 \times K \times xn \times Dt \times L)/(frx \ Vc)$

t = P/K

Substitute: P = (.262x 1667xn xDtxL)/(frxVc)

K = 1667

Multiply: P .= (437 xnxDtx L)/(frxVc)

 $1667 \times .262 = 437$

l"Machining Data Handbook", Metcut Research Associates Inc., (June 1966)
p. 507

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SECTION 9 PROCESS DATA

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MAIN ENGINE PADS FACE MILLING PROCESS TIME CALCULATIONS

MATERIAL INFORMATION:

GIVEN

Description: - MIL-S-22698 Grade D class P Type: - Plain Carbon Steel

EQUIVALENT

AISI NO. - 1018 Plain Carbon Steel Carbon Content - .18% Hardness - 128 BHN

RECOMMENDED SPEEDS AND FEEDS INFORMATION

TYPE CUT	DEPTH OF CUT	FEED (IPT) ft	SPEED (FPM) Vc	TOOLING	CUTTING FLUID
ROUGH CUT	.150	.014	530	C-6 Carbide	Shell Dromus Oil B (Light duty soluble oil)
FINISH CUT	.025	.012	705	c-7 Carbide	Shell Dromus Oil B (Light duty soluble oil)

⁵"Machining Data Handbook", Metcut Research Associates Inc., (June, 1966) p. 113.

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PAGE 9-47

SECTION 9 PROCESS DATA

FIVE INCH GUN MOUNT

FACING PROCESS TIME CALCULATIONS (CONTINUED)

Five Inch Gun Mount Machining Physical Characteristics:

(L) Length of Cut (Inches)
Total -7.75

Depth of Material. Removed (Inches)
Total - 0.50

(Dt) Work Piece Dimension (Inches)
Diameter - 95.9

Facing Formula.*

P = (437 xn x Dt x L)/(fr x Vc)

VARIABLES

- Dt represents diameter of workpiece
- fr represents feedrate in inches per revolution.
- L represents length of cut in inches
- n represents number of cuts
- P represents process time in tmu's.
- Vc represents cutting speed in feet per minute.

*See page 9-49 of this manual...

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SECTION 9 PROCESS DATA

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FIVE INCH GUN MOUNT

FACING PROCESS TIME CALCULATIONS (CONTINUED)

CALCULATIONS:

ROUGH CUTS (3)

FORMULA SUBSTITUTION PROCESS TIME	P = (437 x n x Dt x L)/ (fr x Vc) P = (437x3x95.9x7.75)/(.015 x 380) P = 170,942 TMU'S
	FINISH CUTS (2)
FORMULA SUBSTITUTION PROCESS TIME	P = $(437 \times n \times Dt \times L)/(fr \times Vc)$ P = $(437 \times 2 \times 95 : 9 \times 7.75)/(.007 \times 450)$ P = $206,215 \text{ TMU'S}$

PROCESS TIME:

	THREE ROUGH CUTS @ .150" DEPTH IN TMU 'S	TWO FINISH CUTS @ .025" DEPTHS IN Tmu's	TOTAL PROCESS TIME REQUIRED AT RECOMMENDED CONDITIONS IN TMU'S
Total. for One Five Inch Gun Mount	170,942	206,215	377,157

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t = L/fm

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SECTION 9: PROCESS DATA

BORING PROCESS TIME FORMULA DERIVATION

OPERATION FORMULA

Given $t = L/fm^1$

 $fm = fr \times RPM^1$

Substitute: t = L/(fr xRPM)

Substitute:

 $RPM = Vc/.262 Dt^1$

/(fr x Vc)

n = Number of cuts $t = (.262 \times Dt \times L)$ P = Process time (TMU's)

RPM = Spindle Speed (Rev./

SYMBOLS

fm = feedrate (in/min.) fr = feedrate (in/rev.)

K = Min.to TMU conversion

Dt = Dia. of workpiece (in)

factor (TMU's/MIN.) L = Length of cut (inches)

min.)

t = Process time (minutes)

Vc = Cutting Speed (ft./mir

Multiply: t = (.262x n x Dt xL)/(fr x Vc)

Include Frequency Factor

(n)

 $P = (.262 \times K \times n \times Dt \times L)/(fr \times Vc)$ Substitute:

t = P/k

 $P = (.262 \times 1667 \times n \times Dt \times L)/(fr \times Vc)$ Substitute:

K = 1667

1667 x .262 = 437 $\frac{P = (437 \times n \times Dt \times L)/(fr \times Vc)}{}$

^{1 &}quot;Machining Data Handbook," Metcut Research Associates Inc. (June 1966) p. 507.

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SECTION 9: PROCESS DATA

FIVE INCH GUN MOUNT FACING PROCESS TIME CALCULATIONS

MATERIAL INFORMATION:

GIVEN

Description - MIL-S-24113A Grade N Class U
Type - Plain Carbon Steel

EQUIVALENT

AISI NO - 1018 Plain Carbon Steel Carbon Content - 0.18% Hardness - 161 BHN

RECOMMENDED SPEEDS FEEDS INFORMATION: 4

TYPE	DEPTH	FEED	SPEED	TOOLING	CUTTING FLUID
CUT	OF CUT	(IPR)	(FPM)		
	(In Inches)	fr	Vc		
ROUGH	.150	.015	380	C-6 Car-	Shell Dromus Oil B
CUT				bide	(Light Duty soluble Oil)
FINISH	.025	.007	450	C-7 Car- "	Shell Dromus Oil B
CUT				bide	(Light Duty Soluble Oil)

⁴"Machining Data Handbook", Metcut Research Associates Inc., (June 1966) P.4.

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SECTION 9: PROCESS DATA

STERN TUBE
BORING PROCESS TIME CALCULATIONS
(CONTINUED)

STERN TUBE PHYSICAL CHARACTERISTICS:

<u>DEPTH OF MATERIAL REMOVED</u> <u>ALL LANDS - 0.50 INCHES</u>

(L) LENGTH OF CUT (INCHES)
First Land* - 4.50
Second Land - 3.75
Third Land - 3.75
Fourth Land - 4.75
Total 16.75

(Dt) WORK PIECE DIAMETER
- 52 INCHES

BORING FORMULA**

 $P - (437 \times n \times Dt \times L)/(fr \times Vc$

VARIABLES

Dt represents dia. of workpiece in inches fr represents feedrate in in./rev.
L represents length of cut in inches n represents number of cuts
P represents process time in tmu's
Vc represents cutting speed in feet/rein.

- *A land is a surface upon which supports the main shaft bearing.
- ** See page 9-45 of this manual.

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SECTION 9: PROCESS DATA

STERN TUBE
BORING PROCESS TIME CALCULATION (CONTINUED)

CALCULATIONS:

	ROUGH CUTS
FORMULA	P = (437 xnxDtx L)/(frx Vc)
SUBSTITUTION	$P = (437 \times 4 \times 52 \times 16.75)/(0.012 \times 295)$
PROCESS TIME	P = 430,088 TMU'S
	DINITOH CHEC

	FINISH CUTS
FORMULA	$P = (437 \times n \times Dt \times L)/(frx \ Vc)$
SUBSTITUTION	P = (437x2x52x 16.75)/(.009x310)
PROCESS TIME	$P = 272,851 \text{ TMU}^{t} \text{s}$

PROCESS <u>TIME</u>:

	Four Rough cuts @ .10" Depth in TMU's	Two Finish Cuts @ .05" Depth In TMU's	Total Process Time Required At Recom- mended Conditions in TMU'S
Total for one Stern Tube	430,088	272,851	702,939

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SECTION 9: PROCESS DATA

WIN702,84.024,07:49:59,WIN702.TOMMY.FORT

THIS PROGRAM WILL CALCULATE PROCESS TIMES FOR DRILLING ONE INCH TIME = (437.0*DD)/(FR*VC) WRITE(2,60) DD,FR,VC,TIME FORMAT(F6.4,1X,F5.4,1X,F5.1,1X,F10.1) FORMAT(11,1X,F6.4,1X,F5.4,1X,F5.1) IF(COUNT.EQ.0) GO TO 80 READ(1,20) COUNT, DD, FR, VC DEPTH IN T.M.U.'S REAL DD, FR, VC, TIME INTEGER COUNT GD TO 10 STOF ပပပ 00000100 00001200 00000000 00000000 00000000 00900000 00000000 00800000 0001000 00011000 00600000 00001400

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SECTION 9: PROCESS DATA

STERN TUBE BORING PROCESS TIME CALCULATIONS

MATERIAL INFORMATION:

GIVEN

DESCRIPTION - MIL-S-23008B or 15083B
TYPE - STEEL CASTING

EQUIVALENT

AISI NO. - 1320 Cast Steel, Low Alloy Carbon Content - 0.20% Hardness - 190 BHN

RECOMMENDED SPEEDS AND FEEDS INFORMATION

TYPE CUT	DEPTH I OF CUT (INCHES)	FEED (IPR) fr	SPEED (FPM) VC	TOOLING	CUTTING FLUID
ROUGH CUT	0.100	0.012	295	C-7 CARBIDE	Shell Dromus Oil E
					(Chemical Coolant Type)
FINISH	0.050	0.009	310	C-7 CARBIDE	Shell Dromus Oil E
FINISH CUT					(Chemical Coolant Type)

[&]quot;Machining Data Handbook", Metcut Research Associates Inc., (June 1966) p.55.

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SECTION 9: PROCESS DATA

DRILLING PROCESS TIME FORMULA DERIVATION

<u>OPERATION</u>	FORMULA	SYMBOLS
Given T = L/fm ¹	T = L/fm	Dd = Dia. of drill (in. fm = feedrate (in./min.
Substitute fm = fr x RPM ¹	T = L/(fr x RPM)	<pre>fr = feedrate (in/rev.) K = Minute to TMU con- version factor (TMU /min.) L = Length of cut (in.)</pre>
Substitute: RPM = Vc/.262 Dd ¹	T = (.262 x Dd x L)/ (fr x Vc)	P = Process time (TMU's RPM = Spindle speed (remin.) T = Process time (min.) Vc = Cutting Speed (ft., Min)
Substitue: L = 1	$T = (.262 \times Dd \times 1)/(fr \times Vc)$	
Substitute: T = P/K	$P = (.262 \times K \times Dd)/(fr \times Vc)$	
Substitute: K = 1667	$P = (.262 \times 1667 \times Dd)/(fr \times Vc)$	

 $P = (437 \times Dd)/(fr \times Vc)$

ORM H-1457

Multiply:

1667 x •262 = 437

^{1&}quot;Machining Data Handbook", Metcut Research Associates Inc.
(June 1966) p. 507

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SECTION 9: PROCESS DATA

DRILLING PROCESS TIME COMPUTER PROGRAM

The process time values contained in the process time charts (pages 9-25 through 9-38) were derived using a computer program to calculate the time values in TMU's. The recommended speeds and feeds for the various materials were taken from the Machining Data Handbook. The computer program (on page 9-41) then calculated process time values for the charts. The process time values were transferred as data into the ADRS (A Departmental Reporting System by IBM) Graphics Computer Program. The process time charts were then produced from the ADRS Graphics Computer Program.

RM R-1457

-ORM R-1457

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²"Machining Data Handbook," Metcut Research Associates Inc., (June 1966) p. 221-240.

MOST - calculation

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BOLT-UP		PAGE 10-26	
ACTIVITY SET-UP WITH RATCHE	T		
ONDITIONS			
ALL SHIPYARD AREAS	NO.	SEQUENCE MODEL FR TM	
	1		60
GET BAG OF BOLTS	2		60
2 GET BAG OF NUTS	3		20
	5		50
3 GET HAMMER .	6	A, B, G, A, B, P3 AD	<u>60</u>
4 GET WRENCHES	7		0
	9		<u>50</u>
5 GET SOCKET	10	A, BOG, A, Bo Pa Ao	60
6 ASSEMBLE SOCKET TO RATCHET	11		30
	12	A B G A B P A 5	00
7 COLLECT ALL ITEMS ABOVE		A B G A B P A	
8 PICK-UP SOCKET & RATCHET & DISAST	,	A B G A B P A	
		A B G A B P A	
9 PICK-UP WRENCH	-	A	
10 2000 10 1100100		A B G M X I A	
10 PICK-UP HAMMER		A B G M X I A	
11 PICK-UP BAG OF NUTS	_	A B G M X I A	
DE THE ARMY TOOLS	 	A B G M X I A	
12 AND MATERIALS INTO A TOOL BAG	_	A B G M X i A	
		A B G M X I A	
		A	
		ABGABP ABPA	
		ABGABP ABPA	
		A B G A B P A	
	<u> </u>	A B G A B P A B P A B G A B P A	
		A B G A B P A B P A	
		A B G A B P A B P A	
	L	A B G A B P A B P A	
		ABGABP ABPA	
	<u> </u>	A B G A B P A B P A	
	 	A B G A B P A B P A B G A B P A B P A	
		A B G A B P A B P A	
	-		

TIME =

MOST - calculation

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BOLT-UP

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ACTIVITY POSITION BOLT (OR REMOVE BOLT)

NO.	METHOD	NO.	SEQUEN	CE M	ODEL					FR	- TMU
1	TARRIE TURNEY HOLE	2	Α,	B 0	G ₃	Aj	Во	P	A ()		- 6
1	TAP BOLT THROUGH HOLE	3	Α,	BO	G3	A	Во	Р3	Aο		- 8
2	0		А	В	G	Α	В	Р	Α		
Z	PLACE WASHER ON BOLT		Α	8	G	Α	В	Р	A		
3	GET AND PLACE NUT		Α	8	G	Α	8	P	Α	<u> </u>	
	GET AND PLACE RATCHET AND HOVE		A	8	G G	<u>A</u>	8 B	P	<u>A</u>	-	
4			A	В	G	A	В	P	A	-	-
	TO NEXT BOLT HOLE WITHIN REACH		A	В	G	Ā	В	P	A		
			A	В	G	A	<u>-</u> 8	P	A		
_			A	В	G	A	В	P	A	 	
			Α	В	G	Α	В	Ρ	A		
			Α	8	G	Α	В	Р	Α		
			Α	8	G	Α	В	Р	A		
_			А	8	G	Α	В	P	Α		
			Α_	В	G	Α_	В	Р	Α		
	j		A	В	G	<u> </u>	8	P	<u>A</u>	<u> </u>	
			Α Α	B	G G	A M	B X	<u>P</u>	A	 	
			A								
			A	B B	G	M M	×	1	A		
			A	В	G	M	X	<u>.</u>	A		
		-	A	В	G	M	X	ī	Α		
			А	В	G	М	Х	1	Α		
			А	8	G	M	Х	1	Α		
			Α	В	G	М	Χ	I	Α	, ,	
			A, B _O G)F6		80 P1		(2)	20
		4	A, B, G					B0 B			7
			A B G					ВР			
				A E				B P			
			A B G A B G					B P			
			A B G					B P	_		
			A B G					ВР			
			A B G	A E	3 P		Ą i	в Р	A		
			A B G	A E	3 P		A	в Р	Α		
			ABG	_	-			3 P			
			A B G					3 P			
			A B G					3 P			
			ABG	AE	s P		A	ВР	Α	 	
							-			<u> </u>	
									-		
			1								

MOST - calculation

2003.064

DATE 4/29/84

SIGN. 71 A

PAGE 10-78

STERN TUBE BORING

ACTIVITY P

REMOUE AFT SUPPORT

CONDITIONS	5
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INTEGRATION AREA

	INTEGRATION AREA	٩			
I NO. I	METHOD	I NO.	ISEQUENCE MODEL	FR	TMU
	C T		A 3 B 0 G 1 A 3 B 0 P 3 A		130
1	GET TORCH LINES, REPLACE	3	AI BO GI AI BO PS A		350
2	Consider & Discount COT LINES	4		٠,	60
	CONNECT & DISCONNECT LINES	6		0 -	60
3	PLACE GLOVES, REMOVE GLOVES & GOGGE	12		0 3	120
		14		2	220
4	PLACE GOGGLES	15		0	220
ــ	m da	19		?	60
5	OPEN & CLOSE VALVES	22			0
6	GET & RETURN STRIKER		A B G A B P A		
-	GETT RETURN STRIKEN		A B G A B P A	_	
7	LIGHT TORCH		A B G A B P A		1
			A B G A B P A		
8	ADJUST FLAME		A B G A B P A		
9	10,400 00000		A B G A B P A		ļ
	LOWER GOGGLES	5	A B G A B P A		120
10	RAISE GOGGLES	7	A B G M XO I D A		120
	KAIL GOGOLS	8	A, B, G, M, X, I, A		30
11	POSITION TORCH	9	A, Bo G, M, XO I, A		120
_		10	A B G M X O L O A		90
12	ASIDE TORCH 3 @ .ZIZSMIN/INCH	13		0 (12)3	12,150
13	BURN-TOP & BOTTOM FIXTURES		A B G M X I A		
	DORN TOT FROM TAKES	2	AD BO GO AO BO PI A F54) A BO PI A	1	2300
14	CLIMB ON TOP FIXTURE		ABGABP ARPA	7-7-	200
15			ABGABP ABPA		
<i>(1)</i>	CLIMB OFF TOP FIXTURE		A B G A B P A B P A		!
16	SET-UP TO UNBOLT		A B G A B P A B P A A B P A		-
<u> </u>	UNBOLT		A B G A B P A B P A		
17	(CODE 1005.04 -3/4"BOLT)	-	ABGABP ABPA		
10	REMOVE BOLT		A B G A B P A B P A		
18	(CODE 1005.03)		ABGABP ABPA		
19	11.14.		A B G A B P A B P A		
 ' '	WALK TO & FROM BOTTOM FIXTURE		A B G A B P A B P A	- 	
20	UNBOLT (CODE 1005.04)-34"BOLT	16		0	970
		17		38 2	1676
21	REMOVE BOLT (CODE 1005.03)	18	41		820
		20	83		3352
22	RIGGERS REMOVE AFT SUPPORT	21	41	0 4	1640
TIME	•			24	528
L					

MOST - calculation

2003.01 DATE 6/29/84

DATE 6/29/84 SIGN. TLC

STERN TUBE BORING

PAGE 10-79

ACTIVITY	REMOVE	FORWARD	SUPPORT	مج	BORING	BAR
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NO.	INTEGRATION AREA	NO.	SEQUENCE MODEL	FR
			A 3 B2432G O A2452BO PO A3	
	GET TORCH LINES, REPLACE	3		5
2	Constant de la consta	4	A BO GS A BO P AO	
	CONNECT & DISCONNECT LINES	6	A BO G A BO PS AO	
3	PLACE GLOVES, REMOVE GLOVES / GOGGE	11	A B G G A B P A O	4
4	PLACE GOGGLES	17	A B G A B P A A B G A B P A	_
5			A B G A B P A	
<u> </u>	OPEN & CLOSE VALVES		A B G A B P A	
6	GET & RETURN STRIKER		A B G A B P A	
7	LIGHT TORCH		A B G A B P A A B G A B P A	
0	•		A B G A B P A	
8	ADJUST FLAME		A B G A B P A	
9	LOWER GOGGLES		A B G A B P A A B G A B P A	
		5)2
10	RAISE GOGGLES	7	A, Bo Go M, Xo Io Ao	
11	POSITION TORCH	8	A, Bo G, M, Xo I o Ao	4
		10	A BO G M I XO I O AO I	
12	ASIDE TORCH	13	A B G M X I A	1_
13	BURN 1/2" TACK@ 4 PLAGES P. 2125 MIN/IN		A B G M X I A	
14	SET-UP TO UNBOLT (CODE 1005.02)	2	ABGABP ARPA	2
15	UN BOLT SPYDER		A B G A B P A B P A	
	(COOE 1005.04)-3/4"BOLT REMOVE BOLTS		ABGABP ABPA	
16	(CODE 1005.03)		A B G A B P A B P A B P A	
17	RIGGERS REMOVE SPYDER & BORING BAR		ABGABP ABPA	
' /	BORING BAR		ABGABP ABPA	
			A B G A B P A B P A	_
			ABGABP ABPA ABGABP ABPA	273
			A B G A B P A B P A	
			A B G A B P A B P A	
			ABGABP ABPA	
		14	970	
		15		4
	•	16	410	4

MOST - calculation

CODE 2003.062 DATE 6/29/84 SIGN. TLC

PAGE 10-76

STERN TUBE BORING

ACTIVITY REMOVE FEED MECHA	NISA	Λ	-					-		
ACTIVITY REMOVE FEED MECHA CONDITIONS INTEGRATION ARE	EA									
NO. METHOD	NO.	SEQUEN	ICE N	MODE	L				FR	TMU
, SAME AS INSTALLATION		A	В	G	A	В	Р	Α		
CODE 2003.035		A	В	G	A	В	P	Α	1	
		А	В	G	Α	В	Р	A	<u> </u>	
		А	В	G	A	В	P	Α	1	
		А	₿	G	Α	В	Р	Α		
		А	В	G	Α	В	Р	Α		
		A	В	G	A	В	P	_A		
		A	В	G	<u> </u>	В	Р	A		<u> </u>
	-	A	В	G	A	В	Р	A		<u> </u>
		A	В	G	_ <u>A</u>	В	P	_ <u>A</u> _	 	ļ <u>.</u>
. ,	-	A	<u>B</u>	<u>G</u>	<u>A</u>	В	P	A	↓ —	
	-	A	В	G	_ <u>A</u>	<u>B</u>	P	_ <u>A</u>	-	
	-	A		G	<u>A</u>	В	P	A A	-	
		A	В	G	A	В	P	A	 	
		A	В	G	A	В	P	A	1	
		A	В	G	A	В	P	`` _		 -
		А	В	G	Α	В	P	A		
·		A	В	G	М	х	1	Α		
		А	В	G	M	х	1	A		
		A	В	G	M	Х	ı	Α		
		Α	В	G	М	X	1	Α		
		A	В	G	M	<u></u>	1	<u> </u>		<u> </u>
		A	В	G	М	<u> </u>	1	Α	 	
	<u> </u>	A	В	G	M	<u> </u>	<u> </u>	<u>A</u>	 	
		A B G	B	G B P	М	×	B P	Α		
	-	<u> </u>							 	
·		ABG		B P		<u>A</u>	B P	A		
		A B G					B P		-	
		A B G				_	B P		 -	
·		A B G					B P			
		A B G					ВР			
		A B G	Α	ВР			ВР			
		A B G	Α	вР		A	ВР	A		
		A B G	Α	ВР			вР			
		A B G					ВР			
		A B G					в Р			
		A B G					ВР		<u> </u>	
	- 	A B G	A	в Р		A	ВР	A		
	-/-									24,579
		 	·						 	
	 	 							 	
		<u> </u>	-						<u> </u>	<u></u>
TIME =									24	,579
· · · · · · · · · · · · · · · · · · ·	***								·	·

TIME =

MOST - calculation

CODE

2003.06.

DATE 6/29/84

SIGN. TLC

STERN TUBE BORING PAGE 10-77

REMOVE BORING BAR DRIVE PULLEY ACTIVITY CONDITIONS INTEGRATION AREA NO. METHOD SEQUENCE MODEL NO. FR SET-UP TO UNBOLT A 1 BO GJ A 1 BO PI (CODE 1005.01) AZBOGO AZBOPO TURN BOLT (CODE 1005.06)-3/8" BOLTS G REMOVE BOLT G ((ODE 1005,03) Α G Α REMOVE PALLEY (65 STRIKES) Α В Α Α G В Α 8 G Α B Α GET AND ASIDE KEYWAY Α В G Α В Α В G Α В P Α Α TRAJEL TO SHAFT & RETURN Α Α В G В Α TO BENCH Α Α ₿ G Α В Α G Α В P Α 8 Α В G Α В Α Α R G Α В Α Α В Α Α Α Α G В Α G M X Α В Х Α В G М 1 Α Α В М Α M G М 1 A Х М G G X Α A 18 05, A 186 P, (L=4) A 18 P3 AD (2.41) ABGABP ABPA ABGABP ABPA ABGABP ABPA ABPA ABGABP ABPA ABGABP ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA ABPA ABGABP ABPA ABGABP ABGABP ABPA ABGABP ABPA 860 Z 953

3

MOST - calculation

CODE

2003.058

DATE 6/29/84

STERN TUBE BORING PAGE 10-72

ACTIVITY

ADJUST TOOL CUT (DEPTH)

ο.	TINTEGRATION A	NO.	SEQ	UEN	ICE N	MODE					FR	TMU
	SET UP TO UNBOLT	14		A	Вс	, G,	A	Bo	Pą	AD	24	1440
	CAAE 1005-02			A	В	G	A	В	Р	A		1
`	UN BOLT & BOLT-UP TOOL (3/4")			A	В	G	A	В	Р	Α		1
2	CODE 1005.04			Α	В	G	A	В	P	A		1
	CODE 1005.04 REMOVE BOLT & REPLACE			A	В	G	A	В	P	Α		
3	CODE 1005.03			Α	В	G	Α	В	Р	Α		
	AOJUST TOOL DEPTH			A	8	G	A	В	P	A		Ī
!	NO JUST TOOL DETEN	<u> </u>	<u></u>	A	8	G	Α	В	Р	Α		
		<u></u>		A	В	G	Α	В	Р	Α	<u> </u>	
		<u> </u>		Α	В	G	Α	В	Р	Α_		
		ļ		A	В	G	A	В	Р	Α	<u> </u>	
		↓	<u> </u>	A	В	G	Α	В	P	Α	<u> </u>	
		<u> </u>		A	В	G	Α	В	Р	Α	ļ	
		 		A	B	G	Α	В	Р	Α	<u> </u>	
		<u> </u>		A	В	G	A	В	Р	Α	<u> </u>	ļ
		ļ .	<u> </u>	Α_	В	<u> </u>	A	В	P	_A	├	
			ļ	A	В	G	_ <u>A</u> _	В	P	Α		ļ
		 		<u> </u>	<u>B</u>	<u>G</u>	<u>A</u>	В	<u>P</u>	<u> </u>	 	
				A	В	G	М	X	<u> </u>	<u> </u>		
		-	_	<u> </u>	<u>B</u>	G	M	<u> </u>	<u>!</u>	<u>A</u>	<u> </u>	
		-	-	<u> </u>	<u>B</u>	G	M	X	<u> </u>	<u> </u>	 	
				A	<u>B</u>	G	M M	×	<u> </u>	A		
		-		$\frac{2}{A}$	В		м	$\frac{\hat{x}}{x}$:		<u> </u>	
		-	-	$\frac{2}{A}$		G	M	$\frac{\hat{x}}{x}$	<u>.</u>		-	
		-		<u>-</u>	В	G	M	$\frac{\hat{x}}{x}$	$\dot{}$	A		
						ВР		A E			$\vdash -$	
		<u> </u>	<u> </u>			ВР			3 P		 	
		 				ВР		A			 	+
		<u> </u>				ВР		A E		<u> </u>	-	
						B P		A E			 	
			_			ВР		A E				
						ВР			P			
			АВ	G	Α	ВР		A E	3 P	A		
			A B	G	A	ВР		A E	3 P	A		
			A B	G	Α	ВР		A E				
			А В	G	Α	ВР		A B	Р	A		
			АВ					АВ	Р	Α		
			А В						Р			
			A B	G	Α	ВР		AB	Р	Α		
		1								970	24	23,280
		2							8	38		40224
		3								10	48	19680
			-									

MOST - calculation

CODE

2003.0 DATE 6/29/84

SIGN. TLC
PAGE 10-75

STERN TUBE BORING

ACTIVITY REMOVE ELECTRIC MOTOR

COND	TIONS			
<u> </u>	INTEGRATION AREA			
NO.	METHOD	NO.	SEQUENCE MODEL	FR-
	Can Travelle and annual	Ļ	A3 80 G1 A3 80 P3 A3	<u> </u> .
	GET TORCH LINES, REPLACE	3	A BOG A BOPS A	5
2	CONNECT & DISCONNECT LINES	14	A ₁ B ₀ G ₃ A ₁ B ₀ P ₁ A ₀	-
_	CONNECT & DISCONNECT TIMES	6	A B G A B P AO	5
3	PLACE GLOVES, REMOVE GLOVES & GOGGE	12	A B G A B P A A	<u> </u>
		14	A B G A B B P A A A	
4	PLACE GOGGLES	16	A 2 B n G 2 A 2 B 0 P 1 A 3	
_	n da	17	A B G A B P A	
5	OPEN & CLOSE VALVES		A B G A B P A	
6	GET FRETURN STRIKER		A B G A B P A	
	GETT RETURN STRIKER		A B G A B P A A B G A B P A	
7	LIGHT TORCH		A B G A B P A	
	_		ABGABPA	
8	ADJUST FLAME		A B G A B P A	
_			A B G A B P A	
9	LOWER GOGGLES		A B G A B P A	
	0.100 0-00100	5	A BO G M XO IO AD	(2)2
10	RAISE GOGGLES	-{	A, Bo Go M, Xo Io Ao	
11	POSITION TORCH	8	A, 80 G, M, X0 10 A0	5
-1-1-	TOSTITON TORCH	ĮQ.	A BOG M XO L AO	5
12	ASIDE TORCH	13	A B G M X 32 10 A	5
	(7175 HRS/TWU)	15	A 1 B 0 G , M , X 10 10 A 1	8
13	BURN BRACES & SUPPORT PLATES		ABGMXIA	
111	•	2	10 BO GO AO BO(FIAIF54) A I BO PI AI	(z)2
1.4	REMOVE PULLEY GUARD		ABGABP ARPA	
15	REMOVE NAILS (8 NAILS)		ABGABP ABPA	
15	REMOVE PULLEY BELT		A B G A B P A B P A	
16	REMINE POCCET BELLT		A B G A B P A B P A B G A B P A	
	DICCER OFFICE HOTOR		ABGABP ABPA	
17	RIGGERS REMOVE MOTOR		ABGABP ABPA	
			ABGABP ABPA	-
			ABGABP ABPA	
			ABGABP ABPA	
			ABGABP ABPA	
			ABGABP ABPA	
			ABGABP ABPA	
لـــــا				
TIME	-			6,8

MOST - calculation

CODE

2003.056

DATE 6/29/84 SIGN. TLC

STERN TUBE BORING

PAGE 10-70

CONDITIONS

INTEGRATION AREA

10.	INTEGRATION AR	NO.	SEQUEN	CE N	ODE	L				FR	TMU
•			A	В	G	A	В	Р	A		1
1	SELECT & USE FEELER GAGE MARK LOCATION OF DEPTH		А	В	G	Α	В	P	Α		1
			A	В	G	Α	В	Р	A		
2_	MARK LOCATION OF DEPTH		А	В	G	Α	В	Р	Α		
		L	A	В	G	Α	В	P	Α		
			A	В	G	Α	В	Р	Α		
		<u> </u>	A	8	G	A	В	P	Α		
			A	8	G	A	В	Р	Α		
		<u> </u>	A	В	G	A	В	Р	Α		
			A	В	G	Α_	В	P	Α	<u> </u>	
	·	<u> </u>	A	В	G	Α_	8	Р	Α		
		_	A	В	G	A	В	P	A	<u> </u>	
		-	A	В	G	Α	В	Р	Α	 	<u> </u>
			A	В	G	Α	В	P	Α	 	
		-	A	В	G	<u>A</u>	В	P	<u> </u>		 -
	ļ	+	Α_	8	G	<u>A</u>	<u>B</u>	<u>P</u>	A	-	
		-	A .	<u>B</u>	G	<u>A</u>	В	<u> </u>	<u> </u>	ļ	ļ
		+	A	В	G G	A	В	P .	A_	-	
			 	8		M	<u> </u>	<u>.</u>	A .	 	
		- 	A	B	G	M	×	 	_ <u>A</u>	 	
			A	B	G	M	×	<u> </u>	_A_	-	
			A	В	G	M	$\frac{\hat{x}}{x}$	- 	_ <u>A</u>	-	
			A	В	G	м	$\frac{\hat{x}}{x}$	<u> </u>	A	-	
			A	В	G	M	$\frac{\hat{x}}{x}$	1	A		<u> </u>
			A	В	G	M	$\frac{x}{x}$	- -	- 	-	
		1	A 3 BoG	Α,						8	3/2
		2	AIBOG							8	72
		 			B P			B P		<u> </u>	1.2
			A B G	А	ВР		Α	ВР	A		
			A B G					ВР			
			A B G	Α	ВР			в Р			
			A B G	Α	ВР		A	ВР	A		
			ABG	Α	в Р		Α	ВР	Α		
			A B G	Α	ВР		Α	вΡ	Α		
			A B G				Α	ВР	Α		
			ABG				Α	ВР	Α		
			ABG					В Р			
		<u> </u>	A B G					ВР			
			ABG	Α	ВР		Α	ВР	Α		
		<u> </u>									
		<u>. </u>									

MOST - calculation

CODE

2003.01 DATE 6/29/84

SIGN. 7LC PAGE 10-71

STERN TUBE BORING

ACTIVITY CHANGE TOOL

CONDITIONS	IN	TE6	RAT	ION	AREA
			,	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

	1111 D T 111 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u> </u>									
NO.	METHOD	NO.	SEQUEN	CE M	ODEL	•				FR	Т
•	SET-UP TO UNBOLT	4	Α,	Bo	G,	Α,	Bo	Ρ,	A	2/12	1
1	CODE 1005.02	5				Ao				7x2	_
	UNBOLT TOOL & BOLT-UP TOOL (34)		A	В	G	A	8	Р	<u> </u>	1,,,=	t
2	500E 1005.04		A	В	G	A	В	P	A	 	t
	REMOVE BOLT & REPLACE		A	<u> </u>	G	A	В	P	A	\vdash	t
3	VELLOCE SOCI ! VELTUCE		A	В		A	В	P		+-	╀
	REMOVE TOOL & REPLACE TOOL	 	A	8	G	- A	В	P		 	H
4	Warings 1 and 1 moissing 1995		A	8	G		В	P	A	 	╁
		 	 	 B	G			P	- A	┼──	╀
5	TRAVEL	 -	A			<u> </u>	В			┼	╀
			A .	<u>B</u>	G	_ <u>A</u>	<u>B</u>	<u>P</u>	<u>A</u>	 	╀
	•		A	В	G	<u>A</u>	<u>B</u>	P	<u> </u>	 	╀
		 	A	<u>B</u>	G	<u> </u>	В	P	A		┞
			A	В	G	A	В	P	<u>A</u>	 	╀
			A	8	G	<u>A</u>	В	<u>P</u>	Α	 	Ļ
		<u> </u>	A	В	G	Α	В	Р	<u> </u>	 	L
			A	8	G	Α	В	Р	Α	 	L
			A	8	G	Α	В	Р	Α	ļ	Ļ
			Α_	В	G	Α	В	Р	Α	 	L
	· ·		A	В	G	M	x	1	Α	<u> </u>	L
	•		A	В	G	M	X	. 1	Α		L
	·		A	В	G	M	х		Α		L
			A	В	G	М	×	1	Α		L
			A	В	G	M	X	1	A		L
			A	В	G	М	x	1	A	<u> </u>	L
			A	В	G	M	x	1	Α_		L
			Α	В	G	М	x	1	A		L
			ABG	A E	3 P		A	ВР	A		
			ABG	A	3 P		A	ВР	Α		Γ
			ABG	A E	3 P		A	ВР	Α		
			A B G	A E	3 P		A	3 P	Α		Γ
			A B G	A	3 P		A	ВР	A		Γ
			A B G	A	3 P		A	ВР	A		
			A B G	A E	3 P		A	3 P	Α		Γ
			A B G	A E	3 P		A ·I	ВР	A		Г
			A B G	A E	3 P		A	3 P	A	-	Γ
			A B G					3 P			F
			ABG		_			3 P			Γ
			ABG					3 P			Γ
			A B G					3 P			Γ
			A B G					3 P			Г
		1			-				970	7	6
		2	 						38	7x2	
-		3	 						110		_
		<u>.</u> 3						4	U	7x2	H
			1								<u>_</u>
TIME	=									26	z

MOST - calculation

CODE 2003.054 DATE 6/29/84 SIGN. TLC

TUBE BORING TERN

PAGE 10-68

ACTIV	" FEED TOOL TO AND	FRE	OM LAND SURFACES		
CONDI	TIONS				
NO.	INTEGRATION AREA	NO.	SEQUENCE MODEL	FR	TMU
	WALK TO BORING BAR	1	A 3 B O G O A O B O P O A O	5	150
<u>l</u>		5	A 1 B 0 G 3 A 1 B 6 P 1 A 0		
2	SET-UP TO UN-BOLT		ABGABPA		
	CODE 1005.01	 	ABGABPA		<u> </u>
3	TURN BOLT (12"BOLTS)	<u> </u>	A B G A B P A		
	REMOVE BOLT & REPLACE BOLT	 	A B G A B P A A B G A B P A		
4	CODE 1005.03		A B G A B P A		
5	REMOVE GEAR & REPLACE GEAR		A B G A B P A		
<u> </u>			ABGABPA		
6	SLIDE#2 GEAR IN POSITION	<u> </u>	A B G A B P A		
	LOCK GEAR IN POSITION	-	A B G A B P A A B G A B P A		
7	LOLK GEAR IN 1037 Hore	 	A B G A B P A		
	FEED TOOL TO LAND #1		A B G A B P A		
8			A B G A B P A		
9	FEED FROM LAND 1 TO LAND 2		A B G A B P A		
		 	A B G A B P A		
10	FEED FROM LAND 2 TO LAND'3	6	A, BOG3 Ma Xo Io Ao		
<u> </u>	5 5 (AND 1440 U	7	A B G M X I A	2 × 5	100
11	FEED FROM LAND 3 TO LAND 4		A B G M X I A A B G M X I A		
	FEED FROM LAND 4 TO LAND 1		A B G M X I A		
12	7 7 20 4		A B G M X I A		
			ABGMXIA		
		0	A B G M X I A		
		8	A3 B0 G1 A3 B0 P3 (F54) A1 B0 PD A3		
			A3 BOG 1 A3 B0 P3 (F54) A1 BOPOA 3		
		11	A3 BOG, A3 B0 P3 (F54) A, B0 POA 3		
			A3 B0 G, A3 B0 P3 (F54) A, B0P0 A 3		
			ABGABP ABPA		
		<u> </u>	ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
		2		5	4300
		3			9530
		-7-	410 !	2 <i>X</i> 2	4100
		<u> </u>	<u> </u>	D.C	0110
TIME				77,	848

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2003.05.
DATE 6/29/84

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STERN TUBE BORING

PAGE 10-69

ACTIVITY				
MEASURE	AND FUALUA-	TE TO-	EINLISH CUT	7
110070	11100 0110011		FINISH CO	<i>L</i>

0.	METHOD	NO.	SEQUENCE MODEL	FR
}	OPEN MILROMETER CASE	3	(A, B, G,) A 3 B P A 0	(z)
<u>!</u>		10	(A, B, G,)A, B, P, A,	
,	ASSEMBLE MICROMETER		ABGABPA	
<u> </u>			A B G A B P A	
3	GET WRENCH AND ALIGNMENT		A B G A B P A	
<u> </u>	ENGINEERS DIMENSION PAPER FROM BERTH		A 8 G A B P A	
1	MEASURE ID WITH MICROMETER		A 8 G A B P A	
<u> </u>	(MEASURE 4" RAPIL (4TIMES) X SS MK. SIEXIPOCUR.		ABGABPA	
<u></u>	READ ALIGNMENT ENGINEERS		ASGABPA	
<u> </u>	DIMEN SIONS		ABGABPA	
•	RECORD MICROMETER PIMEN SIONS		ABGABPA	
<u>.</u>			ABGABPA	
7	RECORD ALIGNMENT ENGINEERS		ABGABPA	
	DIMENSIONS		A B G A B P A	
?	CALCULATE DIFFERENCE BETWEEN		A B G A B P A	
	ENSINEERS AND ACTUAL DIMENSIONS		A B G A B P A	
}	ADJUST BET SCREWS ON		ABGABPA	
	BORING BAR		A B G A B P A	
2	TAKE WRENCH, ALIEN ENG. DIM.		A 1 8 0 G 1 M3 X 0 10 A0	
<u></u>	PAPER AND MIC. TO BENCH	8	A B B G O M O X32 I O AO	32
,	DISASSEMBLE MICROMETER	12	A 130 G, Ma Xolo Ao	
	PLACE IN CASE		ABGMXIA	
2	PUT MICROMETER IN CASE		ABGMXIA	
<u> </u>			ABGMXIA	
			ABGMXIA	
			ABGMXIA	
		2.		2_
	i	4	A 180 G 3 A 1 B 0 6 (M54) A 180 P1 A0 (5	5.5)32
		5		32
		6	A, Bo GTA, BOP, RG A, BOP, AO	32
		7		32
		9	A18, G, A, B, P3 F16 A, B, P, A	32
	<u> </u>	11		2
			ABGABP ABPA	
			ABGABP ABPA	
			ABGABP ABPA	
			ABGABP ABPA	
			ABGABP ABPA	`
	·		ABGABP ABPA	
			ABGABP ABPA	
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2003.052 DATE 6/29/84

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STERN TUBE BORING ACTIVITY REMOVE CHIPS

NO.	INTEGRATION AREA	NO.	SEQUE	JCE A	IODE					1	
	GET CHIP PULLER	1 10.								FR	TMU
- }		<u> </u>		<u></u>	ب	A -	20	<u>, o</u>	40	24	1200
'	PLACE CHIP PULLER IN	5		5 த	_ _ c	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	-80	3	<u>ro</u>	10124	960
2	STERN THREE	┝ ╕	A	<u> </u>	<u> </u>	<u>~3</u>	20	<u> </u>		24	144
	STERN TUBES PULL CHIPS OUT OF	-	A	B	G	A	В	P P	<u> </u>	-	ļ
3	FULL CHITS OUT OF	 	 -				В		<u> </u>		<u> </u>
	STER N TUBES PUSH CHIPS OFF SCAFFOLD	<u> </u>	A	8	G G	A	В	P P	A	-	
4		-	Ā		G		В	P	$\frac{2}{A}$	-	
	PUT CHIP PULLER ASIDE	 	A	В	G		В	P	$\frac{7}{A}$	-	
5		 -	A	В	G		В	P			
			A	В	G		В.	P	A		
	,		A	В	G	A	B	P	A		
			A	В	Ğ		В	P	- A		
			A	В	G	- - -	В	P	<u> </u>		
			А	В	G	A	В	P	A		
			А	В	G	A	В	P	Ā		
			А	В	G	Α	В	P	A		
			А	В	G	A	В	P	A		
	•	3		Bo		(M3		i _o		10)24	7200
		4									12000
			А	В	G	М		1	A	7-7	7=
			Α	8	G	М	x	1	A		· · · · · · · · · · · · · · · · · · ·
			Α	В	G	M	×	1	Α		
			Α	В	G	M	X	1	Α		
			Α	В	G	М	x	1	A		
			A	В	G	М	x	1	Α		
			A B G	Α	ВР		A E	P	Α		
			A B G					P			
			A B G	Α_	ВР		A E	P	A		
			ABG				АВ	P	A		
	•		ABG			<u> </u>	A B				
			A B G				A B				
			A B G				A B				
			A B G					Р			
	}		A B G					P			
			A B G				A B			-+	-
	<u> </u>		A B G				A B				
			A B G	_			A B				
ļ	Ì		A B G				A B	P			
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1	}				· ·						
											
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PAGE 10-67

STERN TUBE BORING

ACTIVITY GRIND ROUGH EDGES ON STERN TUBE INTEGRATION AREA SEQUENCE MODEL FR METHOD HOOK-UP AND UN-HOOK AIR LINES GZ/AI)B Ba (TRAVEL 147.5') ASCENO AND DESCEND LAGOER В G Α В G Α В GET ON AND OFF LADDER 8 G Α В Α Α В G В HOOK-UP AND UNHOOK GRINDER TO Α 8 G В Α G 8 AIR LINE GRIND LANDS G Α В (326/2E06E3/ LAND) G ROLL-UP LINES AND UNROLL LINES 8 G Α 8 Α A (APPROX. 202.5') Α В G Α В G 8 G Α В Α Р В G Α В P Α В G Α В В Α G В Z Ans BG GI Xa la Ma)XoloAo A, Bo G AO BIGGO MO XO IO AD Xo Io Ao 2 A , BO G3 M-A 3 B32 G1 G G M X 1 8 G 8 G A B P ABPA BGABP ABPA ABPA ABGABP ABGABP ABPA ABPA BGABP ABGABP ABPA ABGABP ABPA ABPA ABGABP ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA

ABGABP

ABPA

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10-64

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PAGE

STERN TUBE BORING

PREPARE MACHINE AFTER EACH CUT SUB-OPERATION SUMMARY

CODE	DESCRIPTION	TOTAL TMU'S
2003.051	Burn Off Target Markers	29,120
2003.052	Remove Chips	31,440
2003.053	Grind Rough Edges on Stern Tube	93,200
2003.054	Feed Tool to and from Land Surface	79,848
2003.055	Measure and Evaluate ID-Finish Cut	130,260
2003.056	Use Feeler Gages to Determine Next Depth of Cut-Finish Cut Only	3,840
2003.057	Change Tool	26,222
2003.058	Adjust Tool Cut (Depth)	84,624
2003.059	Sharpen Tools	59,180
		537,734

MOST - calculation

CODE

2003.05 DATE 6/29/84

STERN TUBE BORING

PAGE 10-65

	INTEGRATION AREA		
о.	METHOD	NO.	SEQUENCE MODEL FR
	PLACE GLOVES, REMOVE GLOVES	1	(A, B, G, A, B, P3 A,) (5)
	AND GOGGLES	2	A, B, G, A, B, P, A, 4
	PLACE GOGGLES	4	A B G A B P A H
-		9	AD BO GO A BO P3 AD 16
5	OPEN AND CLOSE VALVES	10	A B G A B P A
_	CONTRACTAL CTALLED	 	A B G A B P A A B G A B P A
ļ	GET AND RETURN STRIKER	 	A B G A B P A
	LIGHT TORCH		A B G A B P A
5	LIGHT TORCH		A B G A B P A
	ADJUST FLAME		A B G A B P A
,	1100		A B G A B P A
7	LOWER GOGGLES	<u> </u>	ABGABPA
<u>/_</u>		ļ	A B G A B P A
3	RAISE GOGGLES	<u> </u>	A B G A B P A
)		 	A B G A B P A
9	POSITION TORCH		A B G A B P A
	A	3	A B G A B P A A B B B B B B B B B B B B B B B
0	ASIDE TORCH	5	A, Bo Go M, Xo Io Ap 4
_	CLIMB INTO STERN TUBE	6	(A B @ G M X 0 0 A 0)(2)
	CASTING	7	A, B, G, M, X, I, A, I
	BURN TARGETS (I" SQUARE)	8	A , B O G , M , X 0 10 AD /6
2	(.85 MIN/ TARGET)	11	(A3 B32 G0 Mo X0 10 A3) (4
		12	A, BO G M X 31 10 A 0 16
			A B G M X I A
		<u></u>	A B G A B P A B P A
		 	A B G A B P A B P A
		<u> </u>	
		-	A B G A B P A B P A
		-	ABGABP ABPA
		+	A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
	·	4	A B G A B P A B P A
_		 	

MOST - calculation

CODE

2003.037 DATE 6/29/84

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STEKN TUBE BORING

ACTIV	MEASURE ID AND ADJUST	BOI	RING RAK TO OPTICAL CENTER
COND	INTEGRATION AREA		THE THE PARTY OF T
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
•	OPEN MILROMETER CASE	3	(A, B, G, A, B, P, A, (Z) 80
l	110/01/18/18/19/19/19/19/19/19/19/19/19/19/19/19/19/	10	(A, B, G,)A, B, P, A, (2) 80
	ASSEMBLE MICROMETER	<u> </u>	A B G A B P A
2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		A B G A B P A
	GET WRENCH AND ALIGNMENT		A B G A B P A
3	ENGINEERS DIMENSION PAPER FRIM BERTH		ABGABPA
77	MEASURE ID WITH MICROMETER		ABGABPA
4	MEASURE 4 RAPII (4TIMES) X 55 MK. SICK 1900UR.		ABGABPA
	READ ALIGNMENT ENGINEERS		ABGABPA
5	DIMEN SIONS		A B G A B P A
	RECORD MICROMETER PIMEN SIONS		A B G A B P A
6			A B G A B P A
7	RECORD ALIGNMENT ENGINEERS		A B G A B P A
7	PIMEN SIDN'S		ABGABPA
ø	CALCULATE DIFFERENCE BETWEEN		A B G A B P A
8	ENGINEERS AND ACTUAL DIMENSIONS		A B G A B P A
9	ADJUST SET SCREWS ON		ABGABPA
	BORING BAR		A B G A B P A
In	TAKE WRENCH, ALIGN ENG. DIM.	<u> </u>	A, B, G, M3 X D I O AO SO
10	PAJER AND MIC. TO BENCH	8	A B B G G M B X 32 1 0 A 0 76 24320
1.	DISASSEMBLE MICROMETER	12	A 1 B O G ; M 3 X O I O A O ST
11	PLACE IN CASE		A B G M X I A
12	PUT MICROMETER IN CASE		ABGMXIA
		<u> </u>	ABGMXIA
			ABGMXIA
			A B G M X I A
			A1 B G3 A1 B P3 F10 A0 B0 P0 A0 2 360
		4	A 1B 0G 3 A 1 B 0 P (M54) A 1 B 0 P1 A0 (55) 235,600
		5	A 1 B o G, A 1 B o P O TO A 1 B o P, A o 76 11, 400
		1	A, Bo G3 A 1 BoP, R 6 A 1 BoP A 76 12,160
	· ·	9	A B G A B P R A B P A 76 5320
		7]]	A1B0G, A1B0P3 F16 A1B0P1 A0 76 18240 A1B0G3A0B0P0 F0 A1B0P3 A0 2 360
		33	A ₁ B ₀ G ₃ A ₀ B ₀ P ₀ G ₀ A ₁ B ₀ P ₃ A ₀ 2 360 A B G A B P A B P A
			ABGABP ABPA
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
	i		
TIMI	<u> </u>	1	308,020
			300,020

MOST - calculation

CODE 2003.04 DATE 6/29/84 sign. TムC

STERN TUBE BORING

PAGE 10-63

OPERATE BORING BAR CONDITIONS INTEGRATION AREA SEQUENCE MODEL METHOD 'TMU. TURN BORING BAR MOTOR P G 8 А 0-ON AND OFF G Α В P BORING PROCESS TIME В A Α G Α В P (SEE PAGE 9-44) A A В G REMOVE AND REPLACE OIL CAP Α В G Α В P Α В A G Α INSPECT OIL LEVEL Α В P A A В Α Α G В FILL OIL RESERVOIR Α Α В Α G Α В P Α В Α В G В Р Α Α Α В A A 8 Α Α В Α A В Α В Α G В Α Α В A G В Ρ Α В Α Α G A3 AQ M, 48 2400 Bo G, ×ο 10 В G M 1 Α Α Α В G M X ı A A В G M A G Α Х Α G M X 1 G М х 3 A, B, G, A, B, P, L,O A, B, P, Ao 400 A, B, G, A, B, P, T. A, BoP, Ao ABGABP ABPA ABGABP ABPA BGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP AB PA ABGABP AB PA ABGABP ABPA ABGABP ABPA 2 702 939 1702931 705,809

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2003.035
DATE 6/29/84
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PAGE 10-60

STERN TUBE BORING

ACTIVITY INSTALL FEED CONTROL MECHANISM

ACTIV	"INSTALL FEED CON	TR	OL MECHANISM
CONDI	INTEGRATION AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
,	GET GEAR HOUSING, BOLTS, AND WHEREH		(A) BO G3) A 3 B6 P1 AO (3) 220
1	AND PLACE NEAR STERN TUBE	2	A, B, G, A, B, P3 A, 60
2	PLACE GEAR HOUSING ON BORING	3	A 0 B 6 G 0 A 0 B 0 P 0 A 0 6 362
	BAR BEND AND ARISE	6	A3 B0 (G3) A3 B6 P1 A0 (4) 250
3	BEND HAD HAISE	7	A3 B6 (G3) A3 B6 P6 A1 3 480 A3 B6 (G3) A3 B6 P1 A0 (3) 220
	POSITION BOLTS	10	A3 B6 (G3) A3 B6 P1 A0 (3) 226 A1 B6 G1 A1 B0 P3 A0 2 240
4	(COOF 1005.03)	15	
	BOLT-4P - 2" BOLTS	18	
5	(CODE 1005.06)		A B G A B P A
1	GET GEARS AND BOLTS AND PLACE	<u></u>	A B G A B P A
6	NEAR BORING BAR		A B G A B P A
לו	PLACE GEARS IN POSITION IN	<u> </u>	A B G A B P A
 	GEAR HOUSING POSITION BOLTS		A B G A B P A A B G A B P A
8	LOSITION BOOLS		A B G A B P A A B G A B P A
<u> </u>	BOLT-UP - Y2" BOLTS	 -	A B G A B P A
9	(LODE 1005.06)		A B G A B P A
	GET GEARWORM PLATES, HAMMER, AND BOUTS		A B G M X I A
10	PLACE ITEMS NEAR BORING BAR		A B G M X I A
11	PLACE PLATES IN POSITION ON BORING		A B G M X I A
11	BAR		A B G M X I A
12	FIT PLATES IN POSITION - TAP 25 TIMES	ļ	A B G M X I A
 	POSITION BOLTS		A B G M X 1 A A B G M X 1 A
13	703111014 20213	-	A B G M X I A
	BOLT-UP - 1" BOLTS	12	A, 86G, A, BoP, F32 A, B&P, AO 2 1000
14	(CODE 1005.04)		ABGABP ABPA
	INSTALL EXTERNAL PLATES		ABGABP ABPA
15			A B G A B P A B P A
17	POSITION BOLTS		A B G A B P A B P A
16	0		ABGABP ABPA
17	BOLT-UP - 1"BOLTS (CODE 1005.04)		A B G A B P A B P A B G A B P A B P A
 	RETURN TOOLS TO BENCH		A B G A B P A B P A
18	Hereigh 1888 18 88.		ABGABP ABPA
		4	410 6 2460
1		5	953 6 5718
		8	410 3 1230
		9	953 3 2859
		13	410 2 820
<u> </u>		14	1117 2 2239
1		15	410 4 1646
<u> </u>		17	1117 4 4468
TIME	-		24,579
ь			

MOST - calculation

2003.036 DATE 6/29/84

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STERN TUBE BORING

ACTIVITY INSTALL ELECTRIC MOTOR

CONDITIONS INTEGRATION AREA

	IN TEGRATION TINEA				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TML
ł	RIGGER PLACE MOTOR IN POSITION		A B G A B P A		-0-
1		2	A , B O G ; A 3 B 6 P A C		140
	PLACE BELT ON BORING BAR	3	A 1 B 0 G 3 A 3 B 6 P 3 A 3		19
2	PULLET	6	A, Bo G1 A3 Bo P3 A3		110
3	PLACE BELT ON MOTOR'S PULLEY	7	AO BO GO A3 BO P3 A1	5_	356
<u> </u>			ABGABPA		
4	NAIL MOTOR DOWN-BNAILSOI'L		A B G A B P A		
			ABGABPA		
5	NAIL BRACES DOWN -4 NAILS @ I"L		A B G A B P A		
		 -	A B G A B P A		
6	INSTALL GUARD ON ALLLEY	├──	A B G A B P A		
	PLACE WELDING ROO TO WORK	├	A B G A B P A A B G A B P A		
7	PLACE WELDING AND TO WILL	 	A B G A B P A		
<u> </u>	OPEN AND CLOSE SHIELD	 	A B G A B P A		
8	COUNTY OF CEUSE STILL	 	A B G A B P A		· · ·
<u></u>	WELD BRACES AND SUPPORT PLATES		A B G A B P A		
9	3" TACK WELD @ 5 PLACES@ (.14 MIN/INCH)	 	A B G A B P A		
	PLUG IN MOTOR & UNPLUG MOTOR	8	 	10	30
10	(CODE 1004.13).	9	 	5	3550
			A B G M X I A		,
			A B G M X I A		
			A B G M X I A		
			ABGMXIA		,
-		<u> </u>	ABGMXIA		
<u></u>			A B G M X I A	751	2/4
•				(8)	3601
		5		(4)	18:
		<u> </u>			
		 	A B G A B P A B P A B G A B P A		 -
			ABGABP ABPA		
		-	ABGABP ABPA		
			ABGABP ABPA		······································
			ABGABP ABPA		-
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
		10	2960		291
	·				
		<u> </u>			
TIME			1	13	180
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DATE 6/29/84

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STERN TUBE BORING

ACTIVITY INSTALL AFT. BORING BAR SUPPORT

	INSTALL AFT. BORING B	AK	SUPPORT		
COND	TINTEGRATION AREA				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
	RIGGERS POSITION BOTTOMETOP	1 -	A B G A B P A	 ```	-0-
l	FIXTURES & GEARBOX.	2	A 3 B/6 G3 A3 B/6 P, A3	 	450
	MACHINISTS GET ON AND OFF	6	A o B G G O A O B O P O A O	1	60
2	TOP FIXTURE.	9	A B G A B P A	 	-0-
2	SET-UP TO BOLT-UP TOP FIXTURE TO	13	A 3 B /6 G 3 A 3 B /6 P, A 3		450
3	GEARBOX (CODE 1005.02)	15	An Bo Go Al Bo PS A	6	300
4	POSITION BOLT IN TOP FIXTURE		ABGABPA		
<u> </u>	(CODE 1005.03)	<u> </u>	ABGABPA	ļ	
5	BOLT-UP TOP FIXTURE TO GEAR BOX	<u> </u>	ABGABPA	ļ <u>.</u>	
	(CODE 1005.04)-3/4"BOLT	ļ	A B G A B P A	├	
6	MOVE INTO POSITION FOR BUTTOM		A B G A B P A	<u> </u>	
	FIXTURE	 	A B G A B P A	 	
7	POSITION BOLT IN BOTTOM FIXTURE	 	A B G A B P A		
	(CODE 100 5.03) BOLT-UP BOTTOM FIXTURE TO GERRAL		A B G A B P A A B G A B P A		<u> </u>
8	(CODE 1005.04) - 39" BOLT				
	RIGGER POSITIONS GEARBOX AND	 			
9	FIXTURE ASSEMBLY TO STERN TUBE		A B G A B P A		
	TACK WELD TOP FIXTURE TO STERN TUBE	10	A 2(B/6)G; M; X24 10 A3	(2)	640
10	1 tack weld @ 1" (.14 minlinch@ 5/16" fillet weld)		(AZ B2 G, M, X24 10) A3	(2)	610
	TACK WELD BOTTON FIXTURE TO STEWN TUBE			125	5530
11	2 tack welds@ 1" (.14 min/inch@ 5/16" fillet word)	14	A3 BO G M X270 10 A 3	'''	2780
	WELD BOTTOM FIXTURE COMPLETE ,	16	A BO G MI XO ID AD	12	360
12	201 (.14 min/inch@ 5/16 fillet weld)		A B G M X I A		
12	WELDER GET ON AND DEF TOP		A B G M X I A		
13	FIXTURE		A B G M X I A		
14	WELD TOP FIXTURE COMPLETE		A B G A B P A B P A		
17	1@1' (.14 min / inch@ 5/16" fillet weld)		ABGABP ABPA		
15	PLACE WELDING ROD TO WORK		ABGABP ABPA		
12			ABGABP ABPA		
16	DREN AND CLOSE SHIELD-WELDER	 	A B G A B P A B P A		
			ABGABP ABPA		
			ABGABP ABPA ABGABP ABPA		
			ABGABP ABPA ABGABP ABPA		
			A B G A B P A B P A		
			ABGABP ABPA		
			A B G A B P A B P A		
		3	970		970
		4	410	2	820
		5	838	2	1676
		7	410	4	1640
		8	838	4	3352
TIME	=			19	7,638
	1 P _ 1459				, - -

MOST - calculation

CODE

2003.034

DATE 6/29/84

SIGN. TLC

PAGE 10-59

STERN TUBE BORING

INSTALL BORING BAR DRIVE PULLEY

NO.	INTEGRATION AREA	NO.	SEQUENCE MODEL				FR	72.0
	GET KEY WAY, PULLEY, HAMMER, AND FILE.		(A) BO G3) A3	R.	ρ.	Δ .	+	TMI
1	PLACE ITEMS DOWN NEAR SHAET	4	A, B, G, A,				1(7)	260
	PLACE ITEMS DOWN NEAR SHAFT FILE KEY WAY (80 TIMES)	6	A 3 B 0 G 0 A 3				 	60
2		II	A, B, G, A,				 	70
	TAP KEYWAY (40 TIMES)		A B G A	В	Р	A		1-10
3	TO PULLEY		A B G A	В	P	A		
4	PLACE PULLEY AND KEYWAY		A B G A	В	Р	A		<u> </u>
	ASSEMBLY TO SHAFT		A B G A	В	P	Α		
5	STRIKE PULLEY ONTO SHAFT		A B G A	В	Р	Α		<u> </u>
<u> </u>	(65 STRIKES)		ABGA	В	P	Α		
6	WALK TO BENY AND RETYRN		A B G A		Р	Α		ļ
_	(-T.110 - 0) - 10		A B G A	<u>B</u>	р ·			<u> </u>
7	SET-UP TO BOLT-UP (COPE 1005.01)		A B G A		P	<u>A</u>		 -
	POSITION BOLT		A B G A	В		Α		
8	(CODE 1005.03)		A B G A	В	P P	A		
	0-1		A B G A	<u>в</u>	P	A		-
9	(CODE 1005.06)-3/8" BOLT		A B G A	В	P	A		
10	ROTATE PULLEY (20 TIMES)		A B G M	×		A		
10	(ARM REPOSITION STROKES)	2	A B B G M	Xp	10	An	(80)	820
//	RETURN TOOLS TO BENCH		A B G M	X	1	Α	(-/	
'			A B G M	x	ı	Α		
			A B G M	х	1	Α		
_			A B G M	х	1	Α	-	
			A B G M	X	1	Α		
		-	A B G M	X	1	A		60
			A, BOGIAIBOP, FSY				- ///	600
		<u>5</u> 10	A, B, G, A, B, P, FS				j	136
		10_	A B G A B P		0'0 P		20	1600
			ABGABP	A B				
1		-	ABGABP		Р			
			ABGABP	АВ	P	A		
			ABGABP	ΑВ	Р	A		-
i			ABGABP	АВ	P	A		
			ABGABP	АВ	P	A		•
	<u> </u>		ABGABP		P			
			ABGABP		Ρ,			
-	·		ABGABP		P /			
		77	ABGABP	A 8	P			
-	}	7				60		860
		9				10	4	1640
į	 	-1			7	53	4	3816

MOST - calculation

2003.031 DATE 6/29/84 SIGN. TLC

STERN TUBE BORING

PAGE 10-56

ACTIVITY INSTALL BORING BAR

COND	ITIONS						<u> </u>					
	INTEGRATION AREA											
NO.	METHOD	NO.	SE			MODE					FR	TMU
1	RIGGERS PLACE FORWARD SUPPORT	1	╂	<u> </u>	В		<u> </u>	В	P	A		- 0-
1	IN STERN TUBE RIGGERS IN SERT BORING BAR INTO	2	+		B		<u> </u>	<u>B</u>	P	_ <u>A</u> _	—	-0-
2	STERN TUBE	1	+	A A	 B		<u> </u>	B	P	_ <u>A</u>	 	-0-
	SET-UP TO UNBOLT FORWARD SUPPORT		+	- <u>^</u>	B		- <u>A</u>	<u>B</u>	<u>Р</u> Р	A	 	
3	BOLTS (CODE 1005.01)		+-	A	В			В	Р.	- <u>A</u>	+	
• • •	4N-BOLT FORWARD SUPPORT		1	A	8	G	A	В	P	- <u>A</u>	+	-
4	BOLTS (CODE 1005.06) 314"			A	В	G	A	В	Р	Α	+	+
_	REMOVE FORWARD SUPPORT BOUTS		T	A	В	G	Α	В	P	Α	+-	1
5	(CODE 1005.03)			Α	В	G	Α	В	P	Α		
6	HACHINIST GETS INTO AND OUT			Α	В	G	Α	В	Р	Α		
6	OF STERN THBE	ļ	_	Α	В	G	Α_	В	Р	A		
7	RIGGER SLIDES BORING BAR		-	<u>A</u>	В	G	Α	В	Р	_A_	┵	ļ
<u> </u>	INTO FORWARD SUPPORT POSITION BOLT TO BOLT-4P FORWARD		-	<u> </u>	8	G	A	В	<u>Р</u>	<u>A</u>	——	↓
8			-	<u>A</u>	В	G	<u> </u>	В	P	_ <u>A</u>	┼	-
	SUPPORT (CODE 1005.03) BOLT-UP FORWARD SUPPORT BOLTS		┼	A A	<u>B</u> B	G G	A	В	P	_ <u>A</u> _	┼─	
7	((ODE 1005.06)		╁╾	A.	В	G	A A	B B	P P	_ <u>A</u>	┼─	
		6	<u> </u>	Az		4-32 ^G O					2	1180
			 	Αρ			Mo				+~	1
				A	В	G	M	X	1	A	 	
				Α	В	G	М	х	1	A		†
				Α	В	G	М	х	1	Α		
	•			Α	В	G	М	х	1	Α		
			<u> </u>	Α	В	G	М	x	1	Α		
			-	A	8	_ G	М	X	1	A		
			1			ВР			ВР		 	ļ
						B P			B P		├	
						ВР			B P B P		├	
						ВР			B P		├	
						B P			B P		\vdash	
			A	B G	A	ВР			3 P			
			A i	B G	Α	ВР		A E	ВР	A		
			A	3 G	Α	вР		ΑE	3 P	Α		
			A	3 G	Α	ВР		A E	3 P	Α		
	[3 G					3 P			
				3 G					P			
	}	-	A	3 G	Α	ВР		A 8	3 P			
		3	\vdash							360		860
	-	5	<u> </u>			- .				<u> 29</u>		57/6
		8	\vdash							10		1640
	ŀ	9	_						<u>41</u> 142	0	4	1640
	_		L						174	· / -		<u>57/6</u>
TIME	-										16,	,752
	R-1458											

CONDITIONS

MOST - calculation

2003.032

DATE 6/29/84

SIGN. TLC PAGE 10-57

STERN TUBE BORING

ACTIVITY FINAL POSITIONING OF FORWARD SUPPORT

CONDI	INTEGRATION AREA				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TML
1	MACHINIST GETS INTO AND OUT OF	1	An Bayana Go Ao Bayan Po A		1180
1	STERN TUBE	2	A, Bo G, A, Bo P3 Ao	4	24
7	PLACE NYTS IN POSITIONS	4	A3 B242GO AD B2457PO A3		11.3
2	•	5	A o B o Go A , B o P 7 A	4	200
,	FEED FORWARD SYPPORT LEGS		A B G A B P A		
3	INTO NUTS - 4 TURN - WRIST REPOS.		A B G A B P A		
	COMBINATION WELDER GETS INTO AND		ABGABPA		
4	OUT OF STERN TUBE		ABGABPA		~
	POSITION WELDING ROD		ABGABPA		
5			A B G A B P A		
	RAISE AND LOWER SHIELD		A B G A B P A		-
6			ABGABPA		
77	WELD NUTS-1/2" LENGTH OF WELD		ABGABPA		
7	@ 14HIN./INCH @ 5/16" WELD		ABGABPA		
			ABGABPA		
			ABGABPA		
			A B G A B P A		
			ABGABPA		
	•	7		4	520
		6	(A, Bo G, M, X , 10 Ap)	+	240
		-	A B G M X I A	102	
			A B G M X I A		
			A B G M X I A	 	
			A B G M X I A		
		_	A B G M X I A		
			A B G M X I A		
		3	A BOG A BOP FID ADBO BAO	4	64
		<u> </u>	ABGABP ABPA	-	
			A B G A B P A B P A	 	
			ABGABP ABPA	 	
			A B G A B P A B P A	 	
			ABGABP ABPA	 	
			ABGABP ABPA		
			ABGABP ABPA	 	
			ABGABP ABPA	 	
			ABGABP ABPA	 	
			ABGABP ABPA		
j			ABGABP ABPA	 	
			ABGABP ABPA	 	
Ì			ABGABP ABPA	 	
			A D F A D F A	 	
					-
				\vdash	
l					
TIME	-			4,2	200

MOST - calculation

CODE 2003.021 DATE 6/29/84 SIGN. TLC

STERN TUBE BORING

PAGE 10-54 ACTIVITY AREA TRAVEL - TOOL BOX TO STERN TUBE CASTING STEETURN

NO.	INTEGRATION AREA	NO.	SEQUEN	CE M	ODEL					FR	TMU
	WALK FROM TOOL BOX TO PLATFORM	1	Ao				ر _د 8م	Po	A245		4900
1	325' AND RETURN	4							A 54		1080
~	CLIMB BOTH SETS OF STAIRS	1	A	В	G	A	В	P	A		1.50
2	(15 ANO 7 STEPS)		А	В	G	A	В	P	A		
	(15 AND 7 STEPS) GET ON AND OFF LADDERS		A	В	G	Α	В	P	A		<u> </u>
3	(2LADDERS)		A	В	G	A	В	P	A	 	
			A	В	G	A	В	P	A		
4	WALK ON SCAFFOLD (81°)		A	В	G	A	В	Р	Α		
	the state of the s		A	В	G	A	В	Р	Α		l
			A	В	G	A	В	P	A		· · · · ·
			A	В	G	A	В	P	A		
			A	В	G	A	В	P	A		
			A	B	G	A	В	Р	A		
			A	B	G	A	В	P	A		
			A	В	G	A	В	P	A		
			A	В	G	A	В	P	A		
			А	В	G	A		P	A		
			A	В	G	A	В	P	A		
		2	/AI	Вя	G,			10		122/2	2200
		3	(Ao		_	Ma	X ₂	io	A.)	12) 2	640
			A	8	G	M	×	1	Α	, , , , ,	00
			А	В	G	м	х	1	A		
			A	В	G	М	×	ı	A		
			A	В	G	М	x	ı	A		
			Α	В	G	М	×	1	A		
			А	В	G	M	×	1	A		
			A B G	A I	3 P		A	в Р	Α		
			A B G	A E	3 P		A	3 P	A		
			A B G	A	3 P		A	в Р	Α		
			A B G	A I	3 P		A E	3 P	A		
			A B G	A	3 P			3 P			
			A B G					3 P			
			A B G	A E	3 P			3 P			
			A B G	AE	3 P		A	3 P	À		
			A B G	A E	3 P	-	A E	3 P	Α		
			A B G					3 P			
			A B G					P			
			ABG					P			
			A B G					P			
			A B G				A E	3 P	A		
			1								
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			1								

WM - MANUAL

2003.03

DATE 6/29/84

SIGN. TLC

10-55

PAGE

STERN TUBE BORING

INSTALL BORING EQUIPMENT SUB-OPERATION SUMMARY

CODE	DESCRIPTION	TOTAL TMU'S
2003.031	Install Boring Bar	16,752
2003.032	Final Positioning of Forward Boring Bar Support	4,200
2003.033	Install Aft. Boring Bar Support	19,638
2003.034	Install Boring Bar Drive Pulley	11,143
2003.035	Install Feed Control Mechanism	24,579
2003.036	Install Electric Motor	13,180
2003.037	Measure ID and adjust Boring Bar to Optical Center	308,020
		397,512

MOST - calculation

2003.01

DATE 6/29/84 SIGN. TL C

STERN TUBE BORING

PAGE 10-52

ACTIVITY JOB PREPARATION

CONDITION	IS								
	工	N'	TE	6	RA	TIO	N	AREA	
				_					

	TNIEGKA HON AVEN		,								
NO.	METHOD	NO.	SEQUEN	CE I	MODE	L				FR	TMU
	INITIAL AVERAGE JOB PREPARATIN		A	В	G	A	В	P	A	1	
1	CODE 1001.12	 -	A	В	G	A	В	P		┼──	
 -	ADDITIONAL SIMPLE JOB PREPARATIN	 	Ā	_ <u></u>	G	-	_ <u></u>	P		-	
2	CASE INDIAL SPITE SUBTRICTION	 	A	В	G	A		- <u>'</u> -		-	ļ
<u> </u>	CODE 1001.21	 	 				В				
			Α .	В	G	Α	В	P		ļ	
			A	_ <u>B</u>	G	<u> </u>	B	<u> </u>		ļ	
			A	B	G	A	В	P			
			A	8	G	_ <u>A</u>	В	Р			
			A	В	G	Α	В	Р	A	<u> </u>	
			A	В	G	_ <u>A</u>	В	P	Α	1	
			A	В	G	Α	В	P	A	1	
			А	В	G	A	В	P	A		
			A	В	G	Α	В	P	Α		
			А	В	G	Α	В	P	A		
			A	В	G	A	В	Р		T	
			A	В	G	A	В	P		 	
			A	В	G	A	В	P			
			A		G		В	P			<u> </u>
			A	В	G	M	×	 -	A	 	
		 	 	В	G		$\frac{}{x}$			 	
			A .	B	G	M		<u> </u>		 	
			A .			M	X	- !	A	 	
			A	<u>B</u>	G	M	X	1			
						M	X				
		ļ	A	B	G	M	<u> </u>	1	Α		
			A	В	G	M	<u>X</u>		A	ļ	
			Α	В	G	М	X		A		
			A B G				Α	B	PA		
			ABG	Α	B P		A	В	PA		
			ABG	Α	ВР		_ A	В	PA		
			ABG	Α	B P		Α	В	P A		
			A B G	Α	ВР		Α	В	РА		
			A B G	Α	ВР		Α	В	РΑ		
			A B G				A	В	РА		
			ABG	Α	ВР		Α	В	PA		
			A B G	Α	ВР		A	В	PA		
			ABG						P A		
			A B G						P A		
			ABG						РА		
			A B G						PA		
			A B G						P A		
-		1							001		//2 0= 1
		2		—						13	42001
		-						1.	180	2	2360
											:
			L								
TIME	.=								1	1111	2/1
										44,	56/

MOST - calculation

CODE 2003.02 DATE 6/29/84

STERN TUBE CASTING

PAGE 10-53

	JULKN TUBE CASTA	<u> </u>						1.70		<u> </u>	3.3	
ACTIV	AREA TRAVEL											
OND	ITIONS								-			
	INTEGRATION AREA		,								,	
NO.	METHOD	NO.	SEQ	UENC	E N	IODEI	<u>. </u>				FR	TMU
1	FROM: TOOL BOX TO: STERN TUBE		<u> </u>	A	В	G	A	В	P	Α		
1	CASTING AND RETURN(CODE 2003 R.) FROM: TOOL BOX TO: WETDOCK TOOL			A	В	G	A	В	P	Α	<u> </u>	
_	FROM: TOOL BOX TO: WET DOCK TOOL			Α	8	G	<u> </u>	В	P	Α	ļ	<u> </u>
2_	ROOM AND RETURN (CODE 1002-16)	╀	+	Α	В	G	<u> </u>	В	P	A	<u> </u>	ļ
		<u></u>	 	Α	8	G	Α	В	Р	Α	ـــــ	<u> </u>
		-	┼	<u>A</u>	B	G G	A	<u>B</u>	P P	A	-	
		-	┼	<u>A</u>	8			B	P	A		
		-	-	A A	B	G	_ <u>A</u>	B B	P	A A	 	
		-	-		В		A A	В	P		 	
		-	+	<u>A</u> A	8	G			<u>г</u> Р	A		
		-	+	A	8	G	A	В	P	A	 	
		+	1	A	В	G	_ <u>A</u>		P	A	1	
				A	В	G	A	В	Р	A	1	
_			1-	A	В	G	Α	В	Р	Α		
			1	A	В	G	Α	В	Р	A		
		1		A	В	G	A	В	Р	A		
				Α	В	G	Α	В	Р	Α		
				A	В	G	M	х	ı	Α		
				Α	В	G	M	x	1	Α		
			<u> </u>	Α	В	G	M	х	1	Α	ļ	<u> </u>
		<u> </u>	<u> </u>	Α	В	G	М	Х	1	Α		<u> </u>
			ـــــ	Α	В	G	М	<u> </u>	1	<u>A</u>	ļ	
		1	ļ	A	В	G	M	X	1	A	ļ	<u> </u>
		 	ļ	· A	<u>B</u>	G	<u>M</u>	×	<u> </u>	<u> </u>	 	
		-	A	A	B	G B P	M	×	B P	Α	-	
		 				ВР			B P			
						ВР			B P		-	
		-	+			ВР			В Р			
		-				B P			B P		 	
		-				ВР			ВР		\vdash	
						ВР			ВР			
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						ВР			ВР			
						ВР			ВР			
						ВР			ВР			
			A E	3 G	Α	ВР		Α	ВР			ļ
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		2							<u> </u>	3//	4	145 244
	·		1								 	<u> </u>
		1									<u> </u>	<u> </u>
TIME	=										71	,704

MOST - calculation

2002 • 13
DATE 8-6-84
SIGN. FWM

MAIN ENGINE PADS FACE MILLING

PAGE 10-50

ACTIVITY

CHECK TAPER & FLATNESS

COND	ITIO	NS

CONDITIONS MODULE AREA		
NO. METHOD	NO.	SEQUENCE MODEL FR TMU
	1,	A3 B32 G3 A3 B0 P; A0 8 336
I GET STRAIGHT EDGE, & RETURN IT	2	(A) BO G, A, BO B) AO (2) 8 5760
	3	(A, Bo G, A, Bo P3) Ao (24)8 11.52
2 PLACE STRAIGHT EDGE		A B G A B P A
		A B G A B P A
3 PLACE FEELER GAUGE		A B G A B P A
		ABGABPA
4 SLIDE GAUGE ALONG EDGE	<u> </u>	A B G A B P A
	-	A B G A B P A
5 CHECK TAPER WITH LEVEL	 	A B G A B P A
	ļ	ABGABPA
		A B G A B P A
	—	A B G A B P A
	-	A B G A B P A
	-	A B G A B P A
	+	A B G A B P A
	-	ABGABPA
	4	A B G A B P A
	17	Ao Bo Go (M3) Xo 10 Ao (24)8 5766
		A B G M X I A
	-	A B G M X I A
	+-	A B G M X 1 A
	-	A B G M X I A
	+	A B G M X I A
		A B G M X I A
	+	A B G A B P A B P A
	5	A3 8293 A0 B6(P, A, MO) A 1 BO P, A0 (12) 8 15,20
	† 	A B G A B P A B P A
		A B G A B P A B P A
	1	A E G A B P A B P A
		ABGABP ABPA
		ABGABP ABPA
		A B G A B P A B P A
		ABGABP ABPA
		A B G A B P A B P A
		A B G A B P A B P A
		ABGABP ABPA
		ABGABP ABPA
		ABGABP ABPA
·		
	1	
TIME =		41,600

MOST - calculation

2002.14
DATE 8-6-84
SIGN. FWM
PAGE 10-51

MAIN ENGINE PADSFACE MILLING

ACTIVITY			,	
	REMOVE	MACHINE	& SUPPORT	FRAME
CONDITIONS				

CONDI	MODULE AREA		
NO.	METHOD AREA	NO.	SEQUENCE MODEL FR TMU
		1	(A3 B6 G3 A/6 BO P6 A/6) (2)2 2000
1	GET TORCH LINES OR REPLACE	3	(A, B, G, A, B, P3 A,)(5) 8 2800
_		4	A B G 3 A B O P A O 8 480
2	CONNECT OR DISCONNECT LINES	6	A, BO G, A, BO P3 AO 8 480
0	0 0	11	A 0 B 0 G 0 A / B 0 P 3 A 0 8 320
3	PLACE GLOVES, REMOVE GLOVES OR GOGGLES	12	A B G A B P A 8 160
4	PLACE GOGGLES		A B G A B P A
	1 EACE COUNCES		A B G A B P A
5	OPEN & CLOSE VALVES		A B G A B P A
			A B G A B P A
6	GET & RETURN STRIKER		A B G A B P A
j	•		ABGABPA
7	LIGHT TORCH		ABGABPA
8	12-25- 54.46		A B G A B P A
δ	ADJUST FLAME		A B G A B P A
9	LOWER GOGGLES		A B G A B P A A B G A B P A
	LOWER GODGESS	5	(A, BO G, M) XO 10 A0 (2)16 960
10	RAISE GOGGLES	7	A B O G O M X O I O A O 8 160
	70.00	3	A, Bo G, M, Xo IO AO 8 240
11	POSITION TORCH	9	A/ BO G/ M/ XO 1/ AO 8 320
		10	A, BO G, M, XO 10 AO 8 240
12	ASIDE TORCH		A B G M X I A
10	P.10111		A B G M X I A
13	BURN ALL TACK WELDS	2	
	LoosE	_2_	A B G A B P A B P A
	20002		A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
			ABGABP ABPA
			ABGABP ABPA
	ļ		ABGABP ABPA .
			A B G A B P A B P A
	ŀ		A B G A B P
			A B G A B P A B P A
			A B G A B P A B P A
		13	810 212 171,720
TIME	a		184480
THAIR	_		184,480

MOST - calculation

2002-11
DATE 8-6-84
SIGN. FWM
PAGE 10-45

MAIN ENGINE PADS FACE MILLING

ACTIV	ITY		
	OPERATE MILLING MACH	INE	
CONDI	MODULE AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
		8	(A, B, G, A, B, P, A, 0)(2)8 640
1	ENGAGE SPINDLE, SET FEEDS, STOP		A B G A B P A
	•	L	A B G A B P A
7	FEED HEAD ACROSS		A B G A B P A
マ	FEED HEAD ALONG		A B G A B P A
	FLED HEAD ALONG		A B G A B P A
4	ADJUST HEAD EACH CUT		A B G A B P A
			ABGABPA
5	ADJUST HEAD EACH ROUGH PASS		A B G A B P A
	AT UNIT HEAT CARL CHICH DASS	<u> </u>	A B G A B P A
Θ	ADJUST HEAD EACH FINISH PASS		A B G A B P A A B G A B P A
7	TOTAL PROCESS TIME		ABGABPA
			ABGABPA
	ALL PADS		A B G A B P A
0	C== 60001 001		ABGABPA
8	GET SPRAY CAN		A B G A B P A
9	SHAKE CAN	-/ 2	A/ BO G/ M/ XO 10 A0 (6)80 14,400 A/ BO G/ M/ X32 10 A0 80 28,000
	SHARE CAN	3	A/ BO G/ M/ X2410 AO 80 Z1,600
10	SPRAY ROUGH CUT LINES	9	AOBO GOMO(X173) O AO(2) 8 27,680
		10	A B O G M1 X131 O AO 8 10,720
	SPRAY PAD AFTER MACHINING		A B O G M X336 O A O 8 26,646
į			A B G M X I A A B G M X I A
		4	AOBOGOA BOP F54 AOBOPOAO 18 10080
		5	
		6	AOBOGOA, BOP, FG AOBOPOAO 18 1440
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P
	}		A B G A B P A B P A
			ABGABP ABPA
			ABGABP ABPA
			ABGABP ABPA
			A B G A B P A B P A
	}		A B G A B P A B P A B G A B P A B P A
		7	144,827 144,827
			171,027
TIME	•		2929117
	R-1458		293,947

MOST - calculation

2002.12 DATE 8-6-84 SIGN. FWM

MAIN ENGINE PADS FACE MILLING PAGE 10-49

ACTIVITY	T MAIN ENGINE PAD FACE MI	FEIN	19	,,,,,	
W	ELD SUPPORT FRAME IN PLA	4CE			
CONDITIONS	MODULE AREA				. 1
NO. METH		NO.	SEQUENCE MODEL	FR	TMU
		1	A B G 'A B P	A	0
1 GET	FRAMEWORK PIECES LANDED	4		A ₀)(3)2	1020
		5	A Bo G A Bo P3	A 0 2	120.
0.0	SHIP	6	(A) BO G1 A1 BO P3	A ₁)(2)2	280
2 MEA	SURE FOR POSITION	7 8	(A) BO G A BO P	A 0)(2)2 A 0)(16)2	160
7 1012/4	SURL FOR TUSTITION	9	(A) Bo G A Bo P3	A 0)(16)2	1920
3 MA	RK MEASURE MENT	14	(A BO GI AI BO PL	A 0)(3)2	240
		15	A BO G3 A6 B6 P1	A0 2	340
4 GET	WELDING EQUIPMENTS PIECES	ļ	A B G A B P	A .	
	AR CILLEID	 	A B G A B P	A	
5 PLA	ACE SHIELD		A B G A B P	A	-1
6 PL	ACE GLOVES		A B G A B P	Α	
			A B G A B P	Α	
7 GE	T OR ASIDE WHIP		A B G A B P	Α	<u> </u>
	TOT WILLIAM BOD		A B G A B P	A	ļ
9 1N2	ERT WELDING ROD	10		A 0 (32)2	1920,
9 PIA	CE PIECE	11			53440
		12	(A3 B6 G1 M0 X330) 0	Aa (8)2	54400
10 CL0	SE OR OPEN SHIELD	13	 	AO (16)2	64C
	while and and and and and		A B G M X I	A	
11 TAC	K WELD CHANNEL TO FON		A B G M X I	A	
12 TAC	K WELD ANGLE TO CHANNEL		A B G M X !	A	
			A , Ba G , A 3 B 0 (P, A , M32) A , B 0 P 1		
E d	DECK	3	A1 B0G, A3 B0(P,A,R3)A1 B0 P1		174C
	CASE COSAT CODS		ABGABP ABP		
12 KE	EASE SPENT PODS		A B G A B P A B P		
14 RE/	MOVE SHIELD ÉGLOVES		ABGABP ABP		L I
	·		ABGABP ABP		
15 RET	URN WELDING EQUIPMENT		ABGABP ABP		
	•		ABGABP ABP		<u> </u>
			A B G A B P A B P		'
			A B G A B P A B P		
			ABGABP ABP	A	
			ABGABP ABP	A	
		 			
71145 -			<u> </u>	122	720
TIME =				143	3,720

MOST - calculation

2002. 09
DATE 8-6-84
SIGN. FWM
PAGE 10-46

MAIN ENGINE PADS FACE MILLING

ACTIVITY
INSTALL & CHANGE CUTTING TOOLS

_		
CON	DITIO	SNC

NO.	METHOD	NO.	SEQUEN							FR	TMU
		1	A	Вο	G3	A6	B _{.3}	P1	A _O	4	560
	INSTALL-REMOVE CUTTING TOOLS	3	Aı				_		Ao	4	320
	0	6	1 A			AL			_1 <u>A</u> _	16	1920
	COLLECT TOOLS	7	A		GI		Bo		A _O	16	960
2	LOOSEN OR TIGHTEN COVER WING NUTS		Al			A 6			Ao	2	280
<u> </u>	WOSEN OF HALLEN WAS MING HOLS	10	A	B	G3 G	AL	BO B	<u>P3</u> P	A O	-	100
3	REMOVE OR REPLACE COVER		Α	В	G	A	В	P	Α		
			А	В	G	Α	В	Р	A		
4	HAND TURN PULLEY TO ROTATE HEAD		А	В	G	A	В	Р	Α		
-			A	В	G	Α	В	Р	Α		
5	LOOSEN OR TIGHTEN SET SCREWS		A	В	G	Α	В	P	A	<u> </u>	
6	LUCTALL TARL LARGEAT	<u></u>	A	<u>B</u>	G	<u>A</u>	<u>B</u>	P	<u> </u>		
0	INSTALL TOOL INSERT		A	B	G	A	B B	P	A	<u> </u>	<u> </u>
7	REMOVE TOOL INSERT		A	B	G	<u> </u>	В	P	A		
	KL/NOVE 100L INGER:		A	<u>Б</u>	G	A	В	P	- - -		
			А	В	G	Α	В	P	A		
	•		А	В	G	М	х	I	Α		
	ROTATE TOOLS		A	В	G	М	x	1	A		
_	a		Α	В	G	М	X	1	Α		
8	COLLECT TOOLS		A	B	G	M	X	1	A		
9	LOOSEN OFTIGHTEN COVERWING NUTS		A	B	G	M	<u>^</u>	1	A _		
	LOOSEN OF HAH IEN COVER MING HOTS		A	<u>В</u>	G	M	$\frac{\hat{x}}{x}$	<u>.</u>			
10	REMOVE OR REPLACE COVER		А	В	G	M	x	1	A		
<u></u>		2	A BOG	AoE	30 Pa	Fh	A	Bo Po	AO	(2)4	64
11	HAND TURN PULLEY TO ROTATE HEAD		Ao Bo Go							(8)2	
		. ,	A, BoG	Act	8° 3	AIF	ALE	вοη	AO	(16)2	328
12	MARK FIRST TOOL WITH CHALK	9	A BOG!							(2)2	32
13	I MASELLAD TICHTELL SET SADEWS	11	A B G						-	8	960
ردا	LOOSEN OR TIGHTEN SET SCREWS		A B G					30 A		20	90
14	REMOVE TOOL INSERT & INSPECT		A B G							32	448 800
	,		As Bo G						_	16	1600
15	CLEAN & REPLACE TOOL INSERT	- 15	A B G					3 P		10	1000
			A B G	АВ	P		A B	P	A		

ABGABP

ABGABP

ABGABP

ABPA

ABPA

АВРА

18290

TIME =

MOST - calculation

2002.10 DATE 8-6-84

PAGE 10-47

MAIN ENGINE PADS FACE MILLING

DAILY MACHINE CARE

CONDITIONS

COND	MODULE AREA				,
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
	,	3	A1 B0 G3 A6 B6 B3 A0	2	380
1	THROW POWER LEVER ON 9 OFF	4	A6 86 G3 A6 B0 P6 A0	2	540
		7		(2)2	108
2	PULL COVER OFF OF MACHINE	8	A3 Bo G1 A10 Bo P1 A0	2	300
3	BUNCH UP & LAY ASIDE	-	A B G A B P A A B G A B P A		 -
	DORCH OF TEAT MOTE		A B G A B P A		
4	PICK UP COVER PLACE DNE END		A B G A B P A		
	•		A B G A B P A		
5	PULL OVER MACHINE		A B G A B P A		
6	A	<u> </u>	ABGABPA		
9	ADJUST ALL AROUND	┼	A B G A B P A		
7	PLACE & REMOVE COVER FOR		A B G A B P A		
<u> </u>	TLACE & REMIOVE COVER FOR		A B G A B P A A B G A B P A		
	BREAKER BOX	-	A B G A B P A		
			A B, G A B P A		
8	GET OIL CAN & MOVE ALONG WAYS		ABGABPA		
			(A6 B0 G Mi) X0 10 A0 Y	2)12	1920
9	OIL WAYS	2	A6 Bo G3 MIO XO IO AO	2	380
,	50.01 4.41/ 4.4.00	5	AI BO G3 MO XO IO AO	2	280
10	BRUSH AWAY CHIPS	9	(A3 B0 G3 M3) X0 10 A0 (4)2	720
		1	A B G M X I A	8)2	480
		-	A B G M X I A		
			A B G M X I A		
		10	A 180G, A 180 P1 532 A 180 P1 A0	2	760
			ABGABP ABPA		
			ABGABP ABPA		
			A B G A B P A B P A		
			A B G A B P A B P A		
			ABGABP ABPA ABGABP ABPA		
			ABGABP ABPA	-	
			ABGABP ABPA		_
		 	ABGABP ABPA		
			ABGABP ABPA		•
			ABGABP ABPA		
			ABGABP ABPA		
		<u> </u>	ABGABP ABPA		
	-				
		 			i
TIME	3		1	6	840
	D 1460				

MOST - calculation

2002.07
DATE 8-6-84
SIGN. FWM
PAGE 10-44

MAIN ENGINE PADS FACE MILLING

ושאט	TIONS MODULE AREA										
10.	METHOD	NO.	SEQUEN	CE N	IODE	L				FR	TMU
			A	В	G	Α	В	Р	A		
1_	PLACE LEVEL TO CHECK PRECHECK		А	В	G	Α	В	P	Α		
			A	В	G	Α	В	Ρ	A		
2	ADJUST 2 SCREWS AT LOW END		A	В	G	Α	В	P_	Α	<u> </u>	
			A	В	G	A	В	P	A		L
	WHILE WATCHING LEVEL	 	A	B B	G G	_ <u>A</u>	_ <u>B</u> _	<u>P</u>	_ <u>A</u>	 	
3	PLACE LEVEL ON FON & ADJUST		A	8	G	A	B	P	A	┿	
	PLACE LEVEL ON FUN 7 A DOUST		A	В	G		_ <u>B</u>	P		 	
	TO READ ANGLE		A	В	G			<u>.</u> Р		 	
	70 2017 711900		A	 B	G	A		P		 	
4	RESET LEVEL TO MACHINE		А	В	G	A	В	P	A		
			А	В	G	Α	В	Р	Α		
	TAPER & PLACE IT.		Α	В	G	Α	В	P	Α		
	A		A	В	G	_A_	В	Р	A		
5	ADJUST SCREW AT EACH END		Α_	В	G	Α	В	Р	Α	ļ	
	1./ 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		Α	В	G	<u>A</u>	B	Р	<u>A</u>	-	
	WATCHING LEVEL		A	B	G G	A M	_ <u>B</u>	P .	A	-	
6	ADJUST INTERMEDIATE SCREWS	<u> </u>	A	В	G		$\hat{\mathbf{x}}$	1		-	
Ø_	ADJUST INTERMEDIATE SCREWS		A	В	G	M	$\frac{\hat{x}}{x}$		A		
			A	В	G	м	X	1	A		
			А	В	G	М	×	ı	Α		
			А	В	G	М	х	ı	A		
			А	8	G	M	х	1	A		
			Α	В	G	M	×	t	Α		<u></u>
		1	A BOG								
			A B G								
			A B G								156
		_	A BoG								
	,	<u> </u>	A B G	3 <u>7 o</u>	B./B	Δ. I :		R- P	2 <u>70</u>	(2) (0)	276
		-0	A B G			<u> </u>		B P		1010	870
			ABG					ВР			
			A B G					ВР			
			A B G					ВР		 	
	· · · · · · · · · · · · · · · · · · ·		A B G					B P			
1			A B G					B P			
			A B G					ВР			
			A B G					ВР			
- 1											

MOST - calculation

2002.08

DATE 8-6-84

SIGN. FWAA

MAIN ENGINE PADS FACE MILLING

PAGE 10-45

ACTIVITY

WELD MACHINE IN PLACE

	MODULE AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
		1	A6 B6 G3 A1 B0 P1 A0 6 1020
	GET WELDING EQUIP	2	A1 B0 G1 A1 B0 B A0 6 360
2	CLASE SHIELD	3	A ₁ B ₀ G ₁ A ₁ B ₀ P ₃ A ₀ 6 360
	PLACE SHIELD	5	A B G A B B A (7) (1/20)
3	PLACE GLOVES	3	(A, B, G, A, B, P, A, C) (2) 6 4320
		10	A) 80 G A 80 P A0 6 24
4	GET & ASIDE WHIP	/3	A/ BO G3 A6 B6 P1 A0 6 1070
			A B G A B P A
5	INSERT WELDING ROD	 	A B G A B P A
,	0.445	 	A B G A B P A
6	PLACE TAB	<u> </u>	A B G A B P A A B G A B P A
7	CLOSE & OPEN SHIELD		A B G A B P A
		1	A B G A B P A
8	WELD TAB TOP & BOTTOM		ABGABPA
	·		A B G A B P A
9	RELEASE SPENT ROD		A B G A B P A
		7	(A, B, G, M,) X 0 10 A 0 (6)6 1080
10	REMOVE SHIRLD & GLOVES	8	(A, B6 G, MO X//3)1 0 AO (12)6 8712
, ,	CLEAN WELD	-7-	A B G M X I A 1440
П	CLEAN WELD	+	A B G M X I A A B G M X I A
12	RE CHECK W/ LEVEL		A B G M X 1 A
			ABGMXIA
13	RETURN WELDING EQUIP		A B G M X I A
		11	A, BOG, A, BOP, A, E)A, BOP, As (12)6 10320
		12	A 1 B G G A O B G P A M K A 1 B P A 6 (2) 6 3120
			A B G A B P A B P A
			A B G A B P A B P A B G A B P
		-	ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA "
			ABGABP . ABPA
		<u></u>	ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A B G A B P A B P A
		1	AD FA
		1	

MOST - calculation

CODE 2002.05 DATE 8-6-84 SIGN. FWM

MAIN ENGINE PADS FACE MILLING

10-42 PAGE

ACTIVITY

TACK WELD TABS FOR MACHINE POSITIONING

CON	TIC	ION	S	

FORM R-1458

COND	TIONS MODULE AREA				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
		3	A 1 80 G1 A 1 8 0 P3 A 0	6	360
	M EASURE FROM PAD FOR TABS	4	(A B G A B P 3 A)	(2)6	840
		5		(2)6	
2	MARK DISTANCE	6	A B O G I A I B O P3 AO	6	360
,		7	(AL BO GI AL BOPI AO)	(2)6	480
3	PLACE SHIELD	11		(3)6	720
,,	01.400.01.0100		A B G A B P A		
4	PLACE GLOVES		A		
5	GET & ASIDE WHIP				
ے_	GET & ASIDE WHIP		A B G A B P A A B G A B P A		
6	INSERT WELDING ROD	 -	A B G A B P A		
-6-	INSERT WELDING ROD		ABGABPA		
7	PLACE TAB		ABGABPA		
			ABGABPA		
8	CLOSE FOREN SHIELD		A B G A B P A		
			A B G A B P A		
9	WELD TAB TO DECK		A B G A B P A		
		8	(AI BO GI MI)XO IO AO	(2)6	360
10	RELEASE SPENT ROD	9	(A) B6 G1 MO X67)10 A0	(2)6	9000
		10	Ao Bo G M X O IO AO	6	120
	REMOVE SHIELD & GLOVES		A B G M X I A		
	are Art 1 mm		A B G M X I A		
12	CLEAN WELD		A B G M X I A		
			A B G M X I A		
				6) (22/0
		2		2)6	3360 480
		12		(2) 6	
		1 64	ABGABP ABPA	2/0	1,20
			ABGABP ABPA		
	·		ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			A B G A B P A B P A		
			ABGABP ABPA		
	1				
	<u> </u>				
TIME	=		1	18.	480
5001	D 1450				

MOST - calculation

CODE

2002.06 DATE 8-6-84

73,810

SIGN. FWM

MAIN ENGINE PADSFACE MILLING

PAGE 10-43

	MAIN ENGINE PADSFACE	WIL	LING				PAGE		10-	<u>73</u>	
ACTI	VITY		•								
OND	SET UP & POSITION MACH	HINE	<u> </u>							_	
	MODULE AREA										
NO.	METHOD	NO.	SEQUEN	CE M	ODEL					FR	TN
		2	A	В	G	- A	В	P	A	FR	+
ı	TIGHTEN & LOOSEN CABLES	5	A	В	G		В	P	A	├	0
<u> </u>	MATCH TEOCSEN CABLES	7	A			A10				6	10
2	LAND MACHINE ON FON	8	A						A96		19
	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	9	·			A 6				6	11
3	ATTACH CABLES TO BREAKER BOX		A	В	G	A	<u>- О</u> В	P	A	8	 '''
			А	8	G	A	В	P	A		
4	UNBOLT & REPLACE BOLTS		A	8	G	Α	В	Р	A		\vdash
			A	В	G	Α	В	P	A		\Box
<u>5</u>	MOVE BREAKER BOX		А	В	G	Α	В	Р	Α		
			Α	В	G	Α	В	Р	Α		
6	DETACH CABLES		А	В	G	Α	В	P	A		
_,	40.44	<u> </u>	A	В	G	Α	В	Р	Α		
7	CONNECT BREAKER BOX TO		A	В	G	A	В	Р	Α		<u> </u>
			Α_	В	G	A	В	Р	Α		<u> </u>
	EXTENSION		Α_	В	G	Α	В	Р	Α		
8	0.00 5/55/5/5/5/5/5/5/5/5/5/5/5/5/5/5/5/5/		A	В	G	<u> </u>	В	P	A		<u> </u>
0	PLUG EXTENSION INTO POWER		A .	B	<u> </u>	<u> </u>	<u>B</u>	<u>P</u>	<u>A</u>		
9	COLUMN TO BOSAVED		A	B	G		<u> </u>	1	<u> </u>		
	CONNECT MOTOR LINE TO BREAKER		A	B	G G	M	$\frac{x}{x}$	1 -	<u>A</u>		
	Box		A	В	G	M	^	.	A		
	- 50		Ā	В	G	M	$\frac{x}{x}$	<u>.</u>	 _		
			A	В	G	М	x	1	Ā		
			A	В	G		×	1	A		
			Α	В	G	M	×	ı	A		
]	A3 80 G1	A, 1	Bo Py	416	An E	o Po	Ao	412	10.5
			A3BOG							(4) 6	
		4	A BOG	A OC	03/	4,296)A, E	OP1	Ao	(4) 12	48.
		6	A B B CG	A	Bop	416	AoB	OPO	A	4)6	52
			ABG	A 1	3 P		A E				
			A B G				A B				
			A B G					P			 -
			ABG			·	A E				
			A B G				A B				.30
			ABG				A B				
	}		A B G				A B				"
			A B G				A B				
	<u>}</u>		A B G					<u>Р</u>			
					<u> </u>			<u> </u>	-		
1	ļ										

TIME =

MOST - calculation

2002.03
DATE 8-6-84
SIGN. FWM

Julia	bulluling							SIGN	•	FN	/M	
		MAIN ENGINE PADS FACE N	1144	NG				PAGE		10-	40	
ACTIV	AL	IGN PADS ON FOUNDATION									···· - · · · · · · · · · · · · · · · ·	
CONDI		ODULE AREA										
NO.	METHOD	OVUL ARLA	NO.	SEQUEN	CE M	ODEL					FR	TMU
			1	А	В	G	A	В	P	A	\vdash	0
1	WAIT F	OR PADS TO LAND ON SHIP	2	Α	В	G	A	8	P	Α		0
			3	A	Bo	Gg	Ac		Ρ,	A o	8	880
2	WAIT	FOR ALIGN ENGR TO SHOOT	8	A/	Во	G,	Α,				8	720
		•	11	(A,		G,		Bo		<u> </u>	(z)8	
	LINE	3.	12	A	<u>Во</u>	G G	A /	<u>в</u> в	P 6	A _O	8	1040
3	COLLE	CT TOOLS & ASIDE	-	Ā		G	A	В	P	A	 	
<u> </u>	COLCE	CI TOOLS 7 ASIDE		Α	В	G	A	В	Р	A		
4	WIPE	OFF FON		А	В	G	A	В	Р	Α		
				А	В	G	Α	В	Р	Α		
5	MEASL	IRE FROM ALIGN MARKS		A	В	G	A	<u>B</u>	P	A		
	1140.0	44 CAS (10C AAC) TO	 	A		G	<u> </u>	<u>B</u>	P P	<u> </u>		
6	MARK	MEASURE MENTS		A	В	G	A A	B	P	A		
7	DIVI	OUT CHALKLINE		A	В	G		В	P	A		
	PULL	OUT CHARRENCE		A	В	G	A	<u> </u>	P	A		
8	PLACE	CHALKLINE		Α	В	G	Α	В	Р	Α		
			7	Α,	ВО	G,	МJ	×ο	10	Ao	8	400
9	SNAP	CHALKLINE	9	Α,			М,		10	<u> A0</u>	8	240
10	0514	ID AUAIVINE	10	A /		G/				A 0	8	4480
10	KEWIN	ID CHALKLINE	17				MG MG		10	A _O	8	1440
11	GET &	RETURN HAMMER & PUNCH		A	B	G	М	×	1	A		1770
	•	•		А	В	G	М	х	l	A		
12	PLACE	PUNCH ON MARKS		Α	В	G	M	X	1	A		
_				A / B _O G/								4720
13	CENTE	R PUNCH MARKS	5	A B G	Aot	B _C P ₁	AGM	35/1	BOPL	<u> </u>	(2) 8	7520
111	111800	0T 1440VS	6	A B G	1 Ao (6/1	46K	1/4/	BOPI	<u>^</u> ^	(Z) 8	2560
14	INSTE	CT MARKS		A _O B _O G						A^	(7)8 (7)8	4480 <i>5</i> 60
15	STAND	PAD ON EDGE & MOVE		A, Bo G							8	4720
	<u></u>		/8	A / Bo G	3 A , E	Bo Py	FIC	Α, Ε	30 P/	A _O	8	1440
16	WIPE	FDN		ABG	A E	3 P		A I	ВР	A		
			ļ	A B G					3 P			
17	LAY P	AD DOWN & SLIDE		A B G					3 P			
18	TAPP	AD WITH HAMMER TO		A B G					3 P			
				A B G					3 P			
	ALIGN			ABG	Α Ε	3 P		A E	3 P	A		
												
TIME	=		<u></u>								اـــــا ءء	7 (0 0
	5 4450										31	,600

MOST - calculation

2002.04

DATE 8-6-84

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MAIN ENGINE PADS FACE MILLING

PAGE 15 - 4/

ACTIVITY

FORM R-1458

WELD PADS IN PLACE

	MODULE AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
	_	1	A6 B6 G3 A/ BO P/ A0 8 7360
	GET WELDING EQUIP	2	A 1 B 0 G 1 A 1 B 0 P 3 A 0 8 48
2	OLAGE CHICIP	3	(A B O G A B O P 3 A 1) (2) 8 1 2 .
4	PLACE SHIELD	4	(AI BO GI AI BOPI AO) (2) 8 640
3	PLACE GLOVES	5	(A B O G A B O P A O) (4) 8 1920 (A B O G A B O P A O) (3) 8 960
 	TERCE GLOVES	11	A1 B0 G3 A6 B6 P1 A0 8 136
4	GET SASIDE WHIP	12	A B G A B P A O
			ABGABPA
5	INSERT WELDING ROD		A B G A B P A
1			ABGABPA
6	CLOSE & OPEN SHIELD		A B G A B P A
_			A B G A B P A
7	TACK WELD PAD TO FON		A B G A B P A
8	RELEASE SPENT RODS		A B G A B P A A B G A B P A
0	RELEASE SPENT RODS		A B G A B P A A B G A B P A
9	REMOVE SHIELD & GLOVES		A B G A B P A
	7,7,100,100	6	(A, BoG, M,) xo 10 A0 (8)8 1926
10	CLEAN WELDS	7	(A3B6G/ MO X96)1 O AO (8)8 67.840
		8	AOBOG/ M/) XO 10 AO (4)8 640
Ш	RETURN WELDING EQUIP		ABGMXIA
			ABGMXIA
12	WELD OUT PADS		A B G M X I A
		 	A B G M X I A
		10	A, BOG, AO(B&P, A3 F6)ABBPDAO (8) 8 (0,40
		70	ABGABP ABPA
			ABGABP ABPA
			A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
		 	A B G A B P A B P A
			A B G A B P A B P A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A

MOST - calculation

ING	ALLS							DAT	E	8-6	- 84	
l Suib	building							SIGN	١.	FU	111	
		MAIN ENGINE PADS FACE MI	LLIN	G				PAGE		0-	3 <u>5</u>	
ACTIV		B PREPARATION						= .				
COND	TIONS	MODULE AREA										
NO.	METHOD	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	NO.	SEQUEN	CE I	MODE					FR	TMU
				А	В	G	Α	В	P	A		
1	AVERA	IGE INITIAL JOB		Α	8	G	A	В	P	A		
				A	В	G	Α	В	P	A		
	PREPA	ARATION (CODE 1001-12)	 	A .	<u>B</u>	G	_ <u>A</u>	<u>B</u>	P P	A	ļ	
2	C. A. O.	E ADDITIONAL JOB		A	B	G	A A			A A	<u> </u>	
<u> </u>	SIMPL	E AUDITIONAL 100		A	8	G	A	<u></u>	P	Ā		
	PREPAI	RATION (CODE 1001.21)		A	В	G	A	В	Р	Α		
	1 12 7 12			А	В	G	A	В	Р	Α		
3	RETUR	N TOOLS TO TOOL		A	В	G	Α	В	Р	A		
			<u> </u>	A	В	G	A	В	P	A		
	CRIB	(CODE 1001.121)	 	A .	В	G	<u>A</u>	B	P P	A		
	j			A	8	G	A	В	P	A		
	 		 	A	- <u>-</u> -	G	_ <u></u>	В	P	<u> </u>		
	Ì			A	В	G	A	В	P	A		
				А	В	G	Α	В	Р	A		
				A	В	G	Α	В	Р	Α		
			<u> </u>	A	В	G	М	х	1	Α		
<u> </u>	<u> </u>			A	В	G_	M	_ <u>_x</u>	<u> </u>	Α		
				A	B	G G	M M	×	1	A A		
				A	В	G	M	$\hat{\mathbf{x}}$	<u> </u>	A		
İ				A	В	G	м	×	1	A		
				Α	В	G	М	×	1	A		
				А	В	G	М	×	1	A		
				A B G	A	ВР		Α	ВР	Α		
ļ				A B G					B P			
				A B G					B P			
		,		A B G					B P			
				A B G					ВР			
				A B G	A	ВР			в Р			
				A B G				Α	ВР	A		
			<u> </u>	A B G					ВР			
<u> </u>	ļ		 	A B G					ВР			
1	1		 	A B G					B P			
			-	A B G	_				B P			
				A B G					ВР			-
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			2						113		1	1180
		,	3						5,4		ı	15,417
	<u> </u>		<u> </u>							····.,		
TIME	# D 1450			·							58	.598

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2002.02
DATE 8-6-84
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MAIN ENGINE PADS FACE MILLING

PAGE 10-39

ACTIVITY

AREA TRAVEL

CONDITIONS

	MODULE AREA	NO.	ee.	21155	ICE -	MODE	•				T ==	T ====
VO.	METHOD	NO.	SEC	A	B	G		В	P	Α.	FR	TMU
		 -	┼-				A				┼	 _ _
	FROM TOOL BOX TO MODULE 2	 -	┼	A	В	G		В	Р		┼	
	274.00 -00 -00 (100 5 1000 10)		┼	<u>A</u>		G	_ <u>A</u>	В	P		┼	
	STAIRS OR RETURN (CODE 1002.12)		-	<u>A</u>	В		_ <u>A</u> _	<u>B</u>	P		—	
^		<u> </u>	-	<u> </u>	<u>B</u>	G	<u>A</u>	8	P		—	
2	FROM TOOL BOX TO TOOL		\vdash	<u>A</u>		G_	<u>A</u> _		F		┼	
	ROOM OR RETURN (CODE 1002.16)		├-	A	B	G	<u> </u>	B	P		 -	
	ROOM OR RETURN (CODE 1002-16)		╁		8	G	<u>A</u>	<u>B</u>	<u>-</u> -		┼	
7	FOOM 4400 W F O COLUMN TO		┢	<u>A</u>	B	G	<u>A</u>	<u>B</u>			 	
<u>ی</u>	FROM MODULE 2 STAIRS TO		⊢	<u>A</u> _	<u>B</u>	G	_A	<u>B</u> _	<u>p</u>		┼	}
	HI - A METICAL (117 error)		├	<u> </u>	В	G	A	В	P P		├	
	E.R. # 1 OR RETURN (47 STEAS)		├	<u> </u>	<u>B</u>	G	<u>A</u>				┼──	
,1	mares were the many many		╁	A	8	G	A		P P		 	
	TRAVEL IN E.R. #1, TO EACH FON		\vdash	A	В	G	A	8			+	+
	(24 STEPS)		├─			G		<u>B</u>			├	
	(2431EF3)		├─	A	В	G	A	<u>B</u>	P		 	
Ì			-	A	В	G	A	8 B	P P		 	┼
		<u> </u>	\vdash	A	В	G	M	X	<u>F</u>			
			\vdash			G		$\frac{\hat{x}}{x}$	-		 	
				A	8 B	G	M	×	-		 	
			-	A	В	G	M	$\frac{\hat{x}}{x}$	<u> </u>		 	 -
			├	-	В	G	M	$\frac{\hat{x}}{x}$	1		_	
			-		8	G	M	×	1		├	
			-	Ā		G	M	$\frac{\hat{x}}{x}$	1		 	
	†		-	Ā	В	G	M	$\frac{\hat{x}}{x}$		- Â	 	
			A	8 G		ВР		A	В		1	
			A			ВР		Δ		PA	 	 -
						ВР				PA	 	
						ВР				P A	 	
						ВР				P A	_	
	ļ ,		—			B P			_	PA	 	
				B G					_	P A		
						ВР				PΑ	 	
						ВР				РΑ		
						ВР				P A		
	•					ВР				P A		<u> </u>
	Ì	,				ВР		_		P A	 	
						ВР			-	P A	 	
						ВР				P A		
		1							-	300	4	13,20
	ļ	2								311	2	22,6
		3	 			·			_	810	4	324
	ļ l	4	\vdash		•					420	4	168
I												

MOST - calculation

2001.09
DATE 5/2/84
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FIVE INCH GUN MOUNT FACING

PAGE 10-36

	I FIVE INCH GUN MOUNT FI	ACINO	G PAGE 10-36	
ACTIV	MEASURE PROGRESS (BETWEEN PASS	ES)	\$ VERIFY FLATHESS (AT COMPLETION	1)
CONDI	TIONS INTEGRATION AREA			
NO.	METHOD	NO.	SEQUENCE MODEL FR	TMU
		2	A B G A B P A	0
1	MEASURE THICKNESS OF FLANGE.	4	A, Bo G, A, B, P, A, 2	180
		5	A/ Bo G3 A/ B6 P3 A0 2	280
2	RIGGER GET IDFT. STRAKHT	7	A, B6 G3 A3 B6 P6 A0 2	500
		9	A/ B6 G3 A3 B6 P6 A0 2	500
	EDGE ON BOARD IN BOX.	10	A, B, G, (A, B, P, A,) (8) 20	8400
		11	A / B o G 3 A / B o P C A 6 19	2090
3	UNFASTEN & FASTEN SCREWS IN		A B G A B P A	
			ABGABPA	
	BOX TOP.		A B G A B P A	
			A B G A B P A	
4	PUT & RETRIEVE SCREWS IN BOX		A B G A B P A	
	_		A B G A B P A	
حی	REMOVE & REPLACE BOX TOP		ABGABPA	
	•		A B G A B P A	
6	WIPE STRAIGHT EDGE SURFACES		A B G A B P A	
		L	ABGABPA	
	CLEAN		A B G A B P A	
_			A B G M X I A	
7	TURN STRAIGHT EDGE OVER		A B G M X I A	
			ABGMXIA	
8	WIPE FOUNDATION SURFACE CLEAN		ABGMXIA	
		<u> </u>	A B G M X I A	
9	PLACE STRAIGHT EDGE ON FOUNDATION	ļ	ABGMXIA	
	800000000000000000000000000000000000000	<u></u>	A B G M X I A	ļ
	F REPLACE IN CRATE.		A B G M X I A	
		1		7200
10	INSERT FEELER GUAGE UNDER	3	A, Bo G3 Ao Bo (P3 A, 46), Bo P, Ao (4) 2	
		6	A, B, G, A, B, P, S, 2 A, B, P, A, 2	760
	STRAIGHT EDGE. (.005 GO/NOGO)	8	Ap Bo Go A3 B6 P1 596 A3 B0 P1 A0	1100
٠, ١	many and the stine of the state		A B G A B P A B P A	<u> </u>
//	MOVE STRAIGHT EDGE AROUND	 	A B G A B P A B P A	
	Ainers		A B G A B P A B P A B G A B P A B P A	
	CIRCLE.	-		
			ABGABP ABPA	
		 	A B G A B P A B P A B G A B P A B P A	
				ļ
			A B G A B P A B P A	
		-	ABGABP ABPA	
		1		
		-		
		 	 	
			 	
TIME	<u> </u>	1 ,	22	721
				730

MOST - calculation

2001.10
DATE 5/2/84
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FIVE INCH GUN MOUNT FACING

PAGE 10-37

ACTIV	REMOVE MACHINE FRO	M DECK & R	REMOVE STRIKER BY BURN	IING
COND	INTEGRATION AREA	•		
NO.	METHOD ARCA	NO.	SEQUENCE MODEL	FR
			A B G A B P A	12

GET TORCH LINES, REPLACE 3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A0 A0 A0 A0 A0 A0 A0 A	<u> </u>	INTEGRATION AREA				
GET TORCH LINES, REPLACE 3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A0 A0 A0 A0 A0 A0 A0 A	NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
GET TORCH LINES, REPLACE 3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A1 B0 C3 A0 A0 A0 A0 A0 A0 A0 A	_			A3 B6 G3 A32 B0 P6 A32	2	1640
2 CONNECT DISCONNECT LINES 4		GET TORCH LINES, REPLACE			5-	
1	_	1		A B G S A B B P A A		60
A FLACES GLOVES, REMOVE SLOVES GLOVES GLOVES GLOVES GLOVES GLOVES 4 RACE GOGGLES 14 A B G A B P A 5 OPEN & CLOSE VALVES A B G A B P A 6 GET & RETURN STRIKER A B G A B P A 7 LIGHT TORCH A B G A B P A 8 ADJUST FLAME A B G A B P A 8 ADJUST FLAME A B G A B P A 9 LOWER GOGGLES 5 (A1 B G A B P A A B G A B P A A B G A B P A A B G A B P A CONTROL OF C		CONNECT Y DISCONNECT LINES	6			
## HACE GOGGLES A B G A B P A	7	PLANER CLANER POWER Come of Change	11	Ao Bo Go At Bo P3 Ao		40
## HACE GOGGLES A B G A B P A	٦	THEES GLOVES, REMOVE GLOVES & GOTTLE	5 12	A O B O G O A I B O P I A O		20
A B G A B P A	4	BACE GREEK	14	1		<u> </u>
5 OPEN & CLOSE VALVES A B G A B P A B P A A B G A B P A		TORCE GUIGLES				
A B G A B P A A B P A A B G A B P A A B P A A B G A B	5	DEEN & CIOSE VALVES				
6 GET & RETURN STRIKER A B G A B P A B P A A B G A B P A B P						
A B G A B P A A B G A B P	6	GET & RETURN STRIKER				
8 ADJUST FLAME A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A B A B G A B P A A B G A B P A B A B G A B P A B A B G A B P A B A B G A B P A B A B G A B P A B A B G A B P A B A B G A B P A B A B G A B P A B A B G A B P A A B G A B P A B P A A B G						
8 ADJUST FIAME 9 LOWER GOGGLES 10 RAISE GOGGLES 11 POSITION TORCH 12 AS DE TORCH 13 BURN 14 RIGGER GET MACHINE OFF BOARD 15 A B G A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B P A B B B A B B B A B B B A B B B A B B B B A B	7	LIGHT TORCH		ABGABPA		
A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A ZO ZO ZO ZO ZO ZO ZO	0	daman Finan		A B G A B P A		
9 LOWER GOGGLES 10 RAISE GOGGLES 5 (A, B, G, M, X, D, D, A, C) 7 A, B, G, M, X, D, D, A, C) 8 A, B, G, M, X, D, D, A, C) 11 POSITION TORCH 9 A, B, G, M, X, D, D, A, S, D, D, D, D, D, D, D, D, D, D, D, D, D,	<u> </u>	ADJUST FLAME				
To rect Toron Torch To	9	Inuica Cocarea				
10 RAISE GOGGLES 7 A B G M X D A A S S O O		LOWER GOGGLES			10	10.0
POSITION TORCH	10	Daise GAGRIER	7		4)4	
71 POSITION TORCH 9 A, B, G, M, X, 1, A, 5 200 12 ASIDE TORCH A B G M X 1 A A B		KHIOC GUGGLES	Ŕ			20
ASIDE TORCH	11	Position Torch			5	200
A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M B P A B P A A B G A B P A A B G A B P A A B			10	A, B, G, M, X, I, A		
A B G M X I A 2 2305 A B G M X I A 2 2305 A B G A B P A B P A	12	ASIDE LORCH			1	
2 A B G A B P A B P A B P A B P A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B B A B		Board				
A B G A B P	13	DUKN			_	
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A I O,592	ul	PLACED GET MANUAL DEE BOARD	2		2/2	<u>2300</u>
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A I O,592	17	NIGGER GET MINCHINE OFF DORKD				
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A I O, 59 2						
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A I3 (0,592)						
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A I3 IO,592						 ,
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A I3 I0,592				ABGABP ABPA		
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A I3 IO,592				ABGABP ABPA		
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A I3 I0,592	į					
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A 13 10,592						
A B G A B P A B P A A B G A B P A B P A 13 10,592		}				
A B G A B P						
13 10,592		}				
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FORM R-1458

15,582

MOST - calculation

2001.07
DATE 5/2/84
SIGN. FWM

FIVE INCH GUN MOUNT FACING

PAGE 10-34

	FIVE INCH GUN MOUNT	FAC	CING PAGE 10-37
ACTIV	WELD MACHINE IN PLACE WITH TH	188	WELD FEED STRIKER PLATE
OND	TIONS INTEGRATION AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
		1	A3 B4 G, A, B0 P, A0 /20
1	GET WELDING WHIP & RODS	2	A, B, G, A, B, P, A, 7 420
		3	A/O B6 G3 (A, BO P3) AO (3)4 1240
2	INSERT WELDING RODS	4	A, B, G, A, B, P, A, 60
		5	A B G S A B B P A D 60
3	PLACE TABS	6	A, Bo G, A, Bo Ps A; 5 350 A, Bo G, A3 B6 P, A0 /20
./	O. A. S. Brawen PLOTE	//_	A, B _O G, A ₃ B ₆ P, A ₀ /20
4	PLACE STRIKER PLATE		A B G A B P A
5	PLACE SHIELD		A B G A B P A
<u> </u>	TOTAL VAICE		A B G A B P A
6	PLACE GLOVES, REMOVE GLOVES ISHIELD		A B G A B P A
		<u> </u>	A B G A B P A
7	CLOSE & OPEN SHIELD		A B G A B P A
			A B G A B P A
8	WELD TABS & PLATE (19SEC EACH)		A B G A B P A A B G A B P A
9	WORT WELL	 -	A B G A B P A
_7	INSPECT WELD	7	A, BOG, M, XOIO AO 26 780
10	RELEASE SPENT RODS	8	A, B& G, MO X5410 A0 26 /6/2
		10	A B G G M , X o lo A o 7 140
11	ASIDE WHIP & RODS		A B G M X I A
			A B G M X I A
		ļ	A B G M X I A
		ļ	A B G M X I A A B G M X I A
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	9	Ao Bo Go Ao Bo Po T, Ao Bo Po Ao 13 130
			ABGABP ABPA
			ABGABP ABPA
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
			ABGABP ABPA
			ABGABP ABPA
		 	A B G A B P A B P A
		-	ABGABP ABPA
		1	ABGABP ABPA
			A B G A B P A B P A
TIM	*		19,540
			1,1,0.0

MOST - calculation

2001.08

DATE 5/2/84

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FIVE INCH GUN MOUNT FACING

PAGE 10-35

ACTIVITY

OPERATE MACHINE

CO	N	D	ITI	ONS	

Ο.	METHOD	NO.	SEQUENCE MODEL FR TML
		2	A B G G A B B P A 5 60
1	HAND CRANK HEAD TO START	5	A, Bo G3 A, Bo P3 Ao 5 400
		10	A 1 B 0 G 3 A 1 B 0 P 3 A 1 5 45
	POSITION		A B G A B P A
		<u></u>	A B G A B P A
2	PLACE TOOL		A B G A B P A
		<u></u>	A B G A B P A
3	TIGHTEN OR LOOSEN HOLDING .	<u> </u>	A B G A B P A
		L	A B G A B P A
	SCREW		A B G A B P A
			A B G A B P A
4	TURN POWER ON OR OFF		A B G A B P A
			A B G A B P A
5	GET & ASIDE CONTROLLER		ABGABPA
			A B G A B P A
5	PUSH CONTROLLER BUTTON		A B G A B P A
			A B G A B P A
7	MACHINE FOUNDATION		A B G A B P A
		4	(A, Bo G, M3 X0 10 A0) (2) 5 50
8	ADJUST TOOL HEIGHT	6	(A, Bo G, M, Xo 10 Ao) (2)5 30
		8	AO BO GO M3 XO 10 A/ 5 20
7	LOOSEN THEN TIGHTEN SCREW		A B G M X I A
			A B G M X I A
10	REMOVE TOOL		A B G M X I A
<u> </u>			A B G M X I A
	•		A B G M X I A
		1	Ao Bogo A, Bop, Fizi Ao Bo Po Ao 5 665
		3	A, B, G, A, B, P3A, FID A, B, P, A0 2 54
		9	A, BOG3 AO B (P3 A, F,O) A, BOP, AO (2)4 160
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
		7	MACHINING PROCESS TIME 377,
		<u> </u>	(SPASSES AT RECOMMENDED
			FEEDS & SPEEDS)
		-	- C
		į.	1 1

FORM R-1458

MOST - calculation

CODE 2001.05 DATE 5/2/84 SIGN.

FIVE INCH GUN MOUNT	FACING PAGE 10-								32	
ACTIVITY LEVEL MACHINE									-	
CONDITIONS										
INTEGRATION AREA	NO.	SEQUEN	ICE M	ODE	L				FR	TMU
	3	Α,			Α,	Be	P ₆	A,	2	240
1 LOOSEN ALL 8 LEVELER HOLD	7	Α,			A			Ao	4	240
	9	A		G,				Ap	3	120
DOWN BOLTS.		Α	В	G	Α	В	Р	Α		
2 ROUGHLY ADJUST ALL 4	<u> </u>	A	В	G	<u>A</u>	В	Р	A	ļ	
Z KOOGHLY AWOST ALL T	+	A		G G	<u>A</u> A	В	P	A	 	
LEVELING SCREWS.	-	- A		G		B	P P			
	 	A	В	G	A	В	P	A	 	
3 PLACE POINTER TOOL FREMOVE		Α	В	G	A	В	Р	A	1	
		Α	В	G	Α	В	Р	A		
4 TIGHTEN SET SCREW. LOOSEN	 	A	В	G	Α	В	Р	A		
5 CRANK HEAD INTO POSITION.	-	A .	_ <u>B</u>	<u>-G</u>	<u>A</u>	<u>B</u>	P	<u> </u>	 	
CKHNK MEAU INTO FOUTION.	+ -	A		G	A A	B	P P	A A		
6 ROTATE TO EACH ALIGN MARK		A		G	A	В	P		-	
_		Α	В	G	A	В	P	A	<u> </u>	
7 GET & ASIDE RULE		A	В	G	Α	В	P	Α		
	6	A,	Bo	G,	Mg	X/8	ما	Ao	16	240
8 MEASURE AT EACH AUGN MARK	ļ	Α.	В	G	M	X	1	A	 	
9 GET & ASIDE WRENCH	-	A	B	G G	<u>M</u>	×	.	_ <u>A</u>	 	
1 GET 7 HOTDE WEENER	╂	A	B	G	M	÷	<u> </u>	A	 	
10 FINE ADJUST LEVEL SCREW PAIRS		A	В	G	м	×	ī	A		
		А	В	G	М	x	1	A		
11 RESET POINTER TOOL		A	8	G	М	×	1	A		
	1	A / B G							(8)	1020
12 TIGHTEN ALL 8 HOLD DOWN BOLTS	2	A B G							(4)	560
	3	A, B, G A, B, G								260
		Ap Bp G				A A A			16	120 5250
·		A, Bo G	. Ago	B, P3	F	, A _o I	3 ₀ P.	A	6	1740
	11	A, B, G	3 A/	B _g Pg	(Fi	ا ۱۹(ه	33P1	A,	(2)	370
	12	A, B, G							(8)	1020
		A B G					3 P			
	 	A B G					B P		 	
	-	A B G					P		 	
		A B G					P			
		A B G	A	3 P			3 P			
	<u></u>									
	 								 	
										
	<u> </u>	L							L	L
TIME =								- 1	13,3	370

FORM R-1458

MOST - calculation

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2001.06

DATE 5-2-84

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FIVE INCH GUN MOUNT FACING

PAGE 10-33

ACT	IVI	ΤY
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REMOVE JACK TAB BY BURNING

О.	METHOD	NO.	SEQUEN	CE M	ODEL					FR	TMU
		1	A ₃	B۵	Ġ3	A32	Во	P6	A ₃ Z	2	164
1	GET TORCH LINES, REPLACE	3	Aı			A			Aı	5	35
	,	4	Aı	Во	G3	A		PI	Ao		60
2	CONNECT & DISCONNECT LINES	6	Aı	Во	Gį	A	Bo	P3	Αo		60
	1	11	Ao	ВО	GO	ΑŢ	ВО	P3	Αo		41
3	PLACE GLOVES, REMOVE GLOVES GOGGLES	12	Ao	ВО	Go	Aı	Во	Pı	Ao		24
			Α	В	G	A	В	Р	Α		
+	PLACE GOGGLES .		A	8	G	Α	В	Р	Α	<u> </u>	
	,		A	В	G	Α	В	Р	<u> </u>	<u> </u>	
5	OPEN & CLOSE VALVES		A	В	G	Α	В	P	<u> </u>	<u> </u>	
	and dominations		A	В	G	Α	В	P	<u> </u>	-	
2	GET & RETURN STRIKER		A	В	G	<u> </u>	В	P	<u> </u>		
_	110.17		A	<u>B</u>	G	<u> </u>	<u>B</u>	P	<u> </u>		
_	LIGHT TORCH		A	8	G	<u>A</u>	<u>B</u>	P	<u> </u>	 	
3	AT LICET FLANE		A	<u>B</u>	<u>G</u>	_ <u>A</u>	В	P P	A		
٤	ADJUST FLAME		A	<u>B</u>	G G	A	B B	P	A		
}	LOWER GOGGLES		A	В	G	A	В	P	A		
	LOWER GOOGLES	5	(A)	BO		M,		10		(2)2	12
^	RAISE GOGGLES	7	Aı		Go			10		-/-	
_	KNISC GODGES	8	A,		G				Aa		2 3
,	POSITION TORCH	9	Α,	Во		м,	Χn		Ao		4
<i>'</i>	100:1:0/1	10		В	G	М,	X	10	Ao		3
2	ASIDE TORCH		A	B	G	M	X	1	Α		
			Α	В	G	М	х	ı	Α		
3	BURN (45 SEC)		Α	В	G	M	X	l	Α		
		2	Ao BoG	A	B _O (P ₁	À,Fg	(A)	30Pi	Ą	(2)2	230
			ABG	ΑI	3 P		Αŧ	3 P	Ā		
			ABG	A I	ВР		A E	3 P	Α		
			ABG					3 P			
			A B G					3 P			
			A B G					3 P		 	
i			A B G					3 P			
			ABG								
			A B G					3 P			
			A B G					P P	_		
į			A B G					P	_	-	
			A B G					P		-	
			A B G					B P			
		13						31			131
		10						· • •	<u> </u>		
											
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MOST - calculation

2001.03

DATE 5/2/84

SIGN. FWM

FIVE INCH GUN MOUNT FACING

PAGE 10-30

	FIVE INCH GUN MOUNT	FAC	ING PAGE 10-30
ACTIV	SET UP MACHINE		
CONDI	TIONS INTEGRATION AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
		1	A1 B0 G3 A/ B0 P/ A0 2 /20
1	GET & RETURN HAMMER & PONCH	2	AO BO GO A/O BG PG A O 4 880
		5	A B G A B P A
2	PLACE PUNCH AT ALIGNMENT MARKS	7	A B G A B P A
		8	A3 B0 G3 A/6 B6 P3 A/6 470
3	CENTERPUNCH MARKS	9	A B G A B P A O
.,		12	A B G A B P A
4	INSPECT PUNCH MARKS	ļ	A B G A B P A
	Access demonstrates and a makes		A B G A B P A
<u> </u>	RIGGER GET MACHINE ON BOARD	<u> </u>	A B G A B P A
,	NICOCAT ANICHASUT	 	A B G A B P A A B G A B P A
6	INSPECT ALIGNMENT	 	A B G A B P A
7	RIGGER ADJUST & PLACE UNIT		A B G A B P A
	ICINAER ADVOST 7 . EACE ONCE		ABGABPA
g	PLUG IN MACHINE & RETURN	 	A B G A B P A
	TO STATE OF THE ST		ABGABPA
9	GUARD RALL INSTALLED		A B G A B P A
			ABGMXIA
10	REMOVE & REPLACE OIL CAP		A B G M X I A
			A B G M X I A
	INSPECT OIL LEVEL		A B G M X I A
_	<u> </u>		ABGMXIA
12	FILL OIL RESERVOIR		A B G M X I A
			A B G M X I A
		2	
		3	AOBOGO AOBOB T, AOBOBO AO 4 40
		6	Ao Bo Go Ao Bo P Aio Ts Ao Bo Po Ao 4 520
			A, BoG3 A, BoP3 L/O A, BoP, Ao 2 400
		11	A, BOG, A, BOP, T, A, BOP, AO 70
	·		A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
			ABGABP ABPA
		ļ	A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
		<u> </u>	A B G A B P A B P A B G A B P A B P A
			A B G A B P A B P A
	_	ı	
TIME	<u>-</u>		2840

MOST - calculation

2001.04

DATE 5/2/84

SIGN. FWM PAGE 10-31

FIVE INCH GUN MOUNT FACING

ACTIVITY

FINAL POSITION MACHINE USING JACK

2 3 4 9 2	1	BO BO BB BB BB BB BB BB BB BB BB BB BB B	G G G G G G G G G G G G G G G G G G G	A 1 A 24 A A A A A A A A M 1 M 1	B O B B B B B B B B B B B B B B B B B B	P3 P1 P3 P1 P P P P P P P P P P P P P P	A O A O A O A O A O A O A O A O A O A O		80 4 640 550
3 4 9 2	A 1 A A A A A A A A A A A A A A A A A A	BO BO BB BB BB BB BB BB BB BB BB BB BB B	G G G G G G G G G G G G G G G G G G G	A 1 A A A A A A A A M 1 M 1 M 1	BO BO BO BO BO BO BO BO BO BO BO BO BO B	P3 P1 P3 P1 P P P P P P P P P P P P P P	A O A O A O A O A O A O A O A O A O A O		\$\frac{4}{4}\$\$\frac{6}{550}\$\$
9 2	A 24 A A A A A A A A A A A A A A A A A A	B 6 8 B B B B B B B B B B B B B B B B B	G G G G G G G G G G G G G G G G G G G	A 1 A A A A A A M 1 M 1 M 1	B O B B B B B B B B B B B B B B B B B B	P1 P P P P P P P P P P P P P P P P P P	A O A O A O A O A O A O A O A O A O A O		4 640 550
2	A O A A A A A A A A A A A A A A A A A A	B 6 B B B B B B B B B B B B B B B B B B	G G G G G G G G G G G G G G G G G G G	A 24 A A A A A A A M I M I M /	B B B B B B B B B B B B B B B B B B B	P3 P1 P P P P P P P P P P P P P P P P P	A O A A A A A A A A A A A A A A A A A A		3¢
5	A A A A A A A A A A A A A A A A A A A	B B B B B B B B B B B B B B B B B B B	G G G G G G G G G G G G G G G G G G G	A A A A A A A A A M I M I M I	B B B B B B S X O X 5 4 X O	P P P P P P P P P P P P P P P P P P P	A A A A A A A A A A A A		33
7	A A A A A A A A A A A A A A A A A A A	B B B B B B B B B B B B B B B B B B B	G G G G G G G G G G G G G G G G G G G	A A A A A A A A A M I M I M I M I M I M	B B B B B B B X O X 5 4 X O	P P P P P P P P P P P P P P P P P P P	A A A A A A A A A A A		34
7	A A A A A A A A A A A A A A A A A A A	B B B B B B B B B B B B B B B B B B B	G G G G G G G G G G G G G G G G G G G	A A A A A A A A A A A A A A A A A A A	B B B B B B X O X 5 4 X O	P P P P P P P P P P P P P P P P P P P	A A A A A A A A A A A A A A A A A A A		
7	A A A A A A A A A A A A A A A A A A A	B B B B B B B B B B B B B B B B B B B	G G G G G G G G G G G G G G G G G G G	A A A A A A A M I M I M I	B B B B B B C X 5 4 X Q	P P P P P P I O	A A A A A A A A A		
7	A A A A A A A A A A A	B B B B B B B B B B B B B B B B B B B	G G G G G G G G G G G G G G G G G G G	A A A A A A M I M I M I	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	P P P P P P I O	A A A A A A A A		
7	A A A A A A A A A	B B B B B B B B B B B B B B B B B B B	G G G G G G G G G	A A A A A A M ₁ M ₁	8 8 8 8 8 8 8 8 8 X O	P P P P P IO	A A A A A A A		
7	A A A A A A A A A	B B B B B B B B B B B B B B B B B B B	G G G G G G G G G	A A A A A M ₁ M ₁	B B B B B B X O X54	P P P P I O	A A A A A A A		
7	A A A A A A A A	B B B B B B B B B B B B B B B B B B B	G G G G G G G G G	A A A A M ₁ M ₁	B B B B X O X54	P P P P I O	A A A A A A A		
7	A A A A A A	8 8 8 8 8 8 8 8 8 8 8	G G G G G ₁ G ₀ G/	A A A A M ₁ M ₁	B B B B X O X 54 X O	P P P P	A A A A A A		
7	A A A A A	8 8 8 8 8 8 8 8 8 8	G G G G ₁ G ₀ G ₁	A A A M ₁ M ₁	B B B X O X 5 4 X O	P P P I O	A A A A A		
7	A A A A A A	B B B B O B B B	G G G ₁ G ₀ G ₁	A A A M ₁ M ₁	B B X O X S 4 X O	P P I O	A A A A		
7	A A I A A A A A	B B B B B B B	G G G ₁ G ₀ G	A A M ₁ M ₁	B X O X S 4 X O	P P 10	A A A O		
7	A 1 A 1 A A A A	B 6 B 6 B 8 B	G G1 G0 G1	A M ₁ M ₁	B X _O X _S 4	P 10	A Ao Ao		
7	A I A A A A	B 6 B 6 B 8	G ₁ G ₀ G ₁ G	M ₁ M ₁	× 0 × 54 × 0	10	A _O		
7	A / A A	86 80 8	G _O G _J	M ₁	X54 X0	10	Ao		
7	A / A A	В <i>0</i> В В	G/ G	M,	X0				
	A	B B	G				Aο		3!
	А		G		X		A		
				М	X	1	Α		
	A	B	G	М	х	1	Α		
		В	G	M	х	ı	Α		
	Α	В	G	М	×	1	A		
	A BOG3							(8)	270
3	Ao BoG								3.
	A, BoG								320
Ц	A ₁ B ₀ G ₁			L.					180
-	ABG					3 P			
\rightarrow	A B G				A	3 P			
	A B G					3 P			
\dashv	A B G					3 P			
_	A B G					3 P			
					_				•
	-								
									
	— —								 ,
(}								
-		A B G	A B G A E	A B G A B P A B G A B P A B G A B P A B G A B P	A B G A B P A B G A B P	A B G A B P A B A B G A B P A B	A B G A B P A B P A B P	ABGABP ABPA ABGABP ABPA	A B G A B P A B P A A B G A B P A B P A

.M... . E

MOST - calculation

CODE

2001.01

DATE 5/2/84

SIGN. FWM PAGE 10-28

FIVE INCH GUN MOUNT FACING

ACTIVITY

JOB PREPARATION

CONDITIONS

NO.	INTEGRATION AREA	NO.	SEQUEN	CE I	MODE	L				FR	TMU
			А	В	G	A	В	Р	A	1	
1	INITIAL AVERAGE JOB PREPARATION	 	A	8	G	A	В	P	A	+	
	THE THE PARTIES AND LOSS VICTORIA		A	В	G	Α	В	P		1	†
	(CODE 1001-12)		А	В	G	A	В	P	A	1	
			A	В	G	A	В	P	A	1	
2	RETURN TOOLS TO TOOL CRIB	_	A	В	G	A	В	P	A	1 -	
			A	В	G	Α	В	P	Α		1
	(CODE 1001. 121)		А	В	G	Α	В	P	Α	 	
			A	В	G	A	В	Р	Α		1
			А	В	G	A	В	P	Α		
			A	В	G	A	В	Р	Α		
			А	В	G	Α	В	P	Α	1	
			А	В	G	Α	В	Р	A		
			Α	В	G	Α	В	P	A		
			А	В	G	Α	В	P	Α		
			Α	В	G	Α	В	P	Α		
			А	В	G	A	В	P	Α		
			Α	В	G	<u> </u>	В	P	Α		
			Α	В	G	M	×	1	Α		
	,		Α	В	G	M	×	1	Α		
			A	В	G	М	<u></u>		A	<u> </u>	ļ
			A	В	G	М	×		A	<u> </u>	
			A	В	G	М	X		Α	<u> </u>	
			A	В	G	M	<u></u>	1	A	ļ	
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			ABG						PA	 	
- 1			A B G						P A		<u> </u>
		<u> </u>	A B G				<u>A</u>		P A		ļ
l			A B G		ВР			В		 -	
			A B G					B		 	-
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	•									-	<u> </u>

MOST - calculation

FIVE INCH GUN MOUNT FACING

200|.02 DATE 5/2/84

10-29

SIGN. FWM

PAGE

ACTIVITY

AREA TRAVEL

CONDITIONS

	INTEGRATION AREA										
NO.	METHOD	NO.	SEQUEN	CE M	ODEL					FR	TML
		L	A	₿	G	A	8	P	Α		
	FROM TOOL BOX TO WET DOCK	<u> </u>	Α	В	G	Α	В	Р	Α		
		<u> </u>	A	В	G	A	В	P	A	ļ	<u> </u>
	TOOL RM & RETURN (CODE 1002.16)		A	В	G	A	В	Р	A	ļ	
0	Car. Tax. Payer Francisco ma		A	<u> </u>	G	<u> </u>	В	P	Α	<u> </u>	
2	FROM TOOL BOX TO ELEVATOR FOR	<u> </u>	A	B	G	A	<u> </u>	P P	<u> </u>	ļ	
	INTEGRATED SHIP & RETURN		A	 B	G	<u>~</u>	_ <u>B</u> 	P	A	<u> </u>	
	INTEGRATED SAIP T RETURN		A	В	G		B	<u>.</u> Р	 _	 	
	(CODE 1002.15)		A	В	G	A	В	P	A	 	
	(000 ,000,00		A	В	G	A	В	P	A		<u> </u>
3	WAIT FOR ELEVATOR		A	В	G	A	В	P	A		
			А	8	G	Α	В	Р	Α		
4	WALK ONTO, RIDE, WALK OFF OF		Α	В	G	Α	В	P	Α		
			A	В	G	A	В	P	Α		
	ELEVATOR		Α	В	G	A	8	P	Α		
			A	В	G	A	В	P	Α		ļ
<u>5</u>	SWING OPEN OR CLOSE OUTER DOORS	2	A	В	G	Α	В	<u> P</u>	Α		
,	SUPE CORULA DA CARRA	3	A _O		Go				A 0	2	1080
6	SLIDE OPEN OR CLOSE INNER DOOR	4							A/0	8	1480
7	FROM ELEVATOR TO FWD 5 INCH	6	A,		Gi	M3 M3				8	400
	TROIN ECEVATOR TO TWO S INCH	7		<i>β</i> ₀		Mo		_		2	480
	GUN FOUNDATION & RETURN	<u></u>	A	В	G	м	×	1	A		7.00
			А	В	G	М	x	ı	A		
			Α	В	G	М	х	ı	A		
			ABG	A E	ВР		A E	3 P	A		
			A B G	A E	3 P		A E	P	A		
			ABG	A E	3 P		A E	P	Α		
			ABG	A E	3 P		АВ	Р	Α		
			ABG					P			<u> </u>
			A B G				A B				
	}		A B G					P			
			A B G					P			
	ŀ		ABG				A B				
			A B G				A B				
	ļ		ABG				A B				
			A B G					P			
			A B G					Р			
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TIME	*								- 1	57	,124

MOST - calculation

CODE

3001.01

DATE 7/2/84

SIGN. TLC WASTE HEAT BOILER INSTALLATION PAGE 10-80

ACTIVITY JOB PREPARATION

	MODULE AREA										,
NO.	METHOD	NO.	SEQUE	NCE	MODE	<u> </u>				FR	TMU
,	INITIAL AVERAGE JOB PREPARA-		A	В	G	Α	В	P	Α		
1	TION (CODE 1001.12)		А	В	G	Α	В	Р	Α		
	DETURAL TRACES TO TORK		A	В	G	Α	В	₽	Α		
2	CRIB (CODE 1001.121) SIMPLE ADDITIONAL JOB PREPARATION (CODE 1001.21)		Α	В	G	Α	В	P	A		
3	SIMPLE RODITIONAL JOB PREPARATIM		A	В	G	A	В	P	Α		
<u>)</u>	(CODE 1001.21)		А	В	G	A	В	Р	Α		
-			A	₽	G	A	В	Р	Α		
			A	В	G	A	В	P	Α		
			A	В	G	A	В	P	A	<u> </u>	
			Α_	В	G	A	В	P	A	<u> </u>	
			<u>A</u>	В	G	Α_	В	P			
			Α	В	G	_ A	В	P			
			A	В	G	Α	В	P		<u> </u>	
			Α	В	G	Α.	В	P			
			Α	В	G	<u> </u>	В	P			
			<u>A</u>	В	G	Α .	В	<u> </u>		 -	<u> </u>
			Α.	В	G	<u> </u>	В	P			ļ
			A	<u>B</u>	G	<u>A</u>	<u>B</u>	<u> </u>			
		-	A	В	G	M	X	1		 	
			A	<u>B</u>	<u>G</u> _	M	<u>X</u>			<u> </u>	ļ
			A	B	G	M	<u> </u>	<u>!</u>			
			A	B B	G	M M	×	1			<u> </u>
			A	В	_	M		<u> </u>			
			A	B		M	$\frac{\hat{x}}{x}$				
				В		M	^	-			
 .					ВР				PA		
			A B C						PΑ		
			A B						PA	 	
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			A B C						P A	 	
			A B C						PA		
			а в с						PΑ	<u> </u>	
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			А В С						PΑ		
			АВС						P A		
			A B G						РА	<u> </u>	
			АВС					_	РА		
			д В С						РА		
			A B G				Α	В	РΑ		
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MOST - calculation

CODE

3001.02 DATE 7/2/84

SIGN. TLC PAGE 10-81

WASTE HEAT BOILER INSTALLATION

ACTIVITY LAYOUT PADS

CONDI											
	MODULE AREA										
NO.	METHOD	NO.	SEQUEN	ICE N	IODE	L				FR	TMI
			A	В	G	A	В	Р	Α	1	
	MEASURE LAYOUT LINES		А	В	G	A	В	P	Α		<u> </u>
		1	A	В	G	Α	В	Р	A		,
2	DRAW LAYOUT LINES		А	В	G	A	В	P	A		
7			А	В	G	Α	В	P	Α		7
3	PUNCH LAYOUT HOLES		А	В	G	Α	В	Р	Α		
			A	B	G	Α	В	P	Α	<u> </u>	
			A	В	G	Α	В	Р	Α	ļ	
		<u> </u>	A	В	G	A	В	Р	A	ļ	
		<u> </u>	A	В	G	A	В	Р	_A_		
ļ		-	Α	8	G	<u> </u>	В	Р	A		
		 	A	В	G	<u>A</u>	В	P	<u>A</u>	ļ	<u> </u>
		-	A .	8	G	A_	В	P	_ <u>A</u>	 	
		+	A	B	G	A	8	P P	<u>A</u>	 	
ŀ		-		8	G		B B	P	A A	-	
			A	В	G	A	В	P	A A	-	
		-	A	В	G	A	В	P	Ā	 	
			Ā	В.	G	M	×	<u> </u>	A		
			А	В	G	М	х	1	A	 	
		1	A	В	G	M	×	ı	A		
			A	В	G	М	×	1	A		
			Α	В	G	M	Х	1	Α		
			А	В	G	M	×	ı	Α		
	***		A	В	G	М	X	1	Α	<u> </u>	
		<u> </u>	Α	<u>B</u>	G	M	X	1	Α	ļ.,,	
			A 1BOG								
		2	A BOG	3 Ac	<u> </u>	A, R.	3/A1	B ₀ P	Ap	(42)	2,16
		3	A 1B oG	-						(420)	21,000
			A B G					B P		 	
		-	A B G			_	_	B P		\vdash	
		+	ABG					B P		 	
		-	A B G					B P		 	
		1	A B G					ВР		 	
			A B G					ВР			
		1	A B G					ВР			
			ABG	A	ВР		A	в Р	Α		
			A B G	Α	ВР		А	ВР	Α		
			A B G	Α	ВР		A	ВР	A		
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MOST - calculation

3001.03
DATE 7/2/84

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1.140		4 4	316W. 722		
WASTE HEAT BOILER I	NSTA	ILLATION	PAGE 10-8	2_	
CTIVITY BURN PADS					
MODULE AREA	 	 			
IO. METHOD	NO.	SEQUENCE MODEL		FR	TMU
	11	A32 B 6 G3 A3	2 B O P 1 A 32		106
1 GET TORCH LINES, REPLACE	3	A, Bo G, A,	Bo P3 A1	5	350
2 42	4	A BO GS A	BoPIAO		60
2 CONNECT & DISCONNECT LINES	6	AL BO GIA,			60
3 PLACE GLOVES, REMOVE GLOVES & GOGGE	11	Ao Bo Go At		6	240
O TENCE GLOVES, REMOVE YOURS THOUGH	7 12	A B G A	B P A	 	20
4 PLACE GOGGLES		A B G A	в Р А	 	
		A B G A	B P A		
5 OPEN & CLOSE VALVES	-	A B G A	8 P A		
6 GET FRETURN STRIKER	 	A B G A	B P A	<u> </u>	ļ
b I GET & RETURN STRIKER		A B G A	B P A	 	
7 LIGHT TORCH	1	A B G A	ВРА	 	
		A B G A	ВРА		
8 ADJUST FLAME		A B G A	в г А		
9 LOWER GOGGLES		A B G A	8 P A		
9 LOWER GOGGLES	5	(A ₁ B ₀ G ₁ M ₁	B P A	1010	121
O RAISE BOGGLES	7	A ₁ B ₀ G ₀ M ₁	Xolp As	1	2
3503333	8	A, B, G, M,	XoloAo		3
11 POSITION TORCH	9	A, Bo G, M,	Xo I Ao	6	24
	Figt	A, BO G, M,	×o le Ao	6	18
2 ASIDE TORCH	13	A B G M	X54 10 A0	195	<u>10 \$3</u>
3 BURN (.32 MIN/INCH @ 3510ES @ 195")	1	A B G M	XIA		
1	12/	So Go Ao BOTIA, FS	A B P A	(2)2	230
•	1	ABGABP	ABPA		
		ABGABP	ABPA		
		ABGABP	ABPA		
	 	A B G A B P	ABPA		
	-{- 	ABGABP	ABPA		
	1,	ABGABP	ABPA	<u> </u>	
	1	ABGABP	АВРА		
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	_!	A B G A B P	ABPA		
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}	 	· · · · · · · · · · · · · · · · · · ·			

MOST - calculation

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DATE 7/2/84

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WASTE HEAT BOILER INSTALLATION

PAGE 10-83

ACTIVITY GRIND PADS

	GIVIND FINDS		·		
:ONDI	MODULE AREA				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
1	PLACE CHOCKS IN WATER	3	A, B, G, A, B, P, A,		60
		7	A / B / G 7 A / B / P 3 A / B / B / B / B / B / B / B / B / B /	_6_	48
2	WAIT FOR CHOCK TO COOL		A B G A B P A		
3	GET CHOCKS		A B G A B P A A B G A B P A		
4	TURN ON GRINDER		A B G A B P A		
5			A B G A B P A		
	PLACE PART TO GRINDER		A B G A B P A A B G A B P A		
6	TURN GRINDER OFF		A B G A B P A A B G A B P A		
7	COLLECT PAOS		A B G A B P A A B G A B P A		
			A B G A B P A		
			A B G A B P A		
			A B G A B P A		
		2	A B G A B P A A B B G M P X 73 I P A P		1,73
		4	A24 B G M (X310) A24	13 8	4/ 03
		6	A, Bo G, M, Xo ID Ao	13,0	36
		-8-	A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G A B P A B P A	6	420
			ABGABP ABPA		
			A B G A B P A B P A		
			ABGABP ABPA		
			ABGABP ABPA		_
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FORM R-1458

MOST - calculation

3001.05

DATE 7/2/84

SIGN. TLC WASTE HEAT BOILER INSTALLATION PAGE 10-84 ACTIVITY AREA TRAVEL CONDITIONS MODULE AREA NO. METHOD SEQUENCE MODEL TMU G A 1 FROM: TOOL BOX A B TO: WET DOCK TOOL ROOM В G А & RETURN (CODE 1002.16) 3 А G В Α Α E G В Α FROM: TOOL BOX Α В G TO: FREE STOCK G & RETURN (CODE 1002.17) Α B G Α В Α G В G В 3 FROM: TOOL BOX Α Б G Α В A B G A B P TO: MODULE Z STAIRS G Α E Α FRETURN (COPE 1002.12) B G В A B G Х А FROM: MODULE Z STAIRS A & G Α TO: AMR NO. 1 A B G Х A B G { RETURN (CODE 1002.18) G A B G M \mathbf{x} RETURN TOOLS TO TOOL B G ABGABP ABPA ROOM IN WETDOCK BLDG. ABGABP ABPA ABGABP ABPA FRETURN TO TOOL BOX ABGABP ABPA ABGABP ABPA (CODE 1002.16) ABGABP A B . A ABGABP ABPA 6 FROM: AMR NO. 1 ABCABP AEPA ABGABP ABPA TO: ENGINE ROOM NO. 1 ABGABP ABPA ABGABP ÉRETURN (CODE 3001.051) ABPA ABGABP ABPA 1 11311 22,622 1960 3 3300 4 2270 3/3/1 5480 10960 TIME =

MOST - calculation

300 1.051

DATE 7/2/84 SIGN. TLC

WASTE HEAT BOILER INSTALLATION

PAGE 10-85

TRAVEL FROM AMR#1 TO ENGINE ROOM NO. 1 & RETURN CONDITIONS MODULE AREA METHOD SEQUENCE MODEL TMU NO. 2 A O B O G O A 3 2 B 3 2 P O 1280 CLIMB LADDER G В A В G A В 2 THROUGH MANHOLE Α В G Α В Α G Α В Α В Α Α 8 G В Α 8 G В Α Α В G Α Α 8 Α G В A В Α G Α В Α Α В Α В G Α В Α Α В G Α A G В G В Р Α Α В Α Α В Α Α В G G Ρ Α Α В Α В A В G Α В P Α В Α G Α В 1012 421 > Α,)x_n М, l_D An B/6 G, х G Α X ı Α G М Α В х A Α В G М A В G M Х Α G м X В A G M X A R G X 1 BGABP ABPA BGA ВР ABPA ABPA BGABP BGA 8 P ABPA BGABP ABP Α ABGABP ABPA ABGABP ABPA ABPA ABGABP ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABP Α BGABP ABPA ABPA ABGABP 5480 TIME =

MOST = calculation

CODE 3001.06

DATE 7/2/84

SIGN. TLC PAGE 10-36

WASTE HEAT BOILER TNSTALLATION

ACTIVITY LAYOUT PAD LOCATIONS CONDITIONS

NO. SEQUENCE MODEL	
MEASURE PAD LOCATIONS	TMU
A B G A B P A A B G A B P A B P A A B G A B P A B	<u> </u>
2 MARK PAD LOCATIONS A B G A B P A B P A A B G A B P A B P A A B G A	
3 PUNCH HOLE LOCATIONS A B G A B P A A B G M X I A A B G M X I	<u> </u>
3 PUNCH HOLE LOCATIONS A B G A B P A A B G M X I A A B G M X I	i
A B G A B P A A B G	
A B G A B P A A B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B A B B B B A B B B B A B	
A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G M X I A A B G	1
A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G M X I A A B G	<u> </u>
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A B G A B P A A B G M X I A A B G M B P A B P A A B G M B P	
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A B G M X I A A B G	
A B G M X I A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A	<u> </u>
A B G M X I A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A	1
A B G M X I A A B G M B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A	<u> </u>
A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G A B P A B P A B P A A B G A B P A B P A B P A A B G A B P A B P A B P A A B G A B P A B P A B P A A B G A B P A B P A B P A B P A A B G A B P A	<u> </u>
A B G M X I A I A, B, G, A, B, P, A, M, A, B, P, A, (2) (14) Z A, B, G, A, B, P, A, B, P, A, B, P, A, (2) (2) 3 A, E, G, G, A, B, P, A, B, P, A, B, P, A, C, C) A B G A B P A B P A	
2 A, 3, 6, A, 8, P, (\$\hat{R}_3\$) A, 8, P, A, (2) A, 3 A, 8, P, A, B, P, A, (2) A, B, P, A, P, P, A, P, P, A, P, P, A, P, P, A, P, P, A, P, P, P, P, P, P, P, P, P, P, P, P, P,	
3 A, E _O G ₃ A, B _O P ₃ F, A, B _O P, A _O G A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A	7230
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A E G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A	1560
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A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A	
A B G A B P	
A B G A B P	
A B G A B P	
A B G A B P A B P A B P A	
A B G A B P A B P A	
	
TIME =	630

MOST - calculation

CODE 3001.07 DATE 7/2/84

WASTE HEAT BOILER INSTALLATION .

PAGE 10 - 87

ACTIVITY REMOVE TEMPORARY BOLTS

CONDI	MODULE AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
	GANTRY L.O.S. BOILER	1	A B G A B P A O
l		5	A D B O G O A 3 B O P 3 A O 12 t
	SET-UP TO UNBOLT	6	A . B . G . A 6 B 6 P 3 A 0 152
2	(CODE 1005.01) UNBOLT 4 BOLTS	7	A ₀ B ₀ G ₀ A ₃ B ₆ P ₃ A ₀ /2C
7	UNBOLT 4 BOLTS	8	A ₀ B ₀ G ₀ A ₆ B ₆ P ₃ A ₀ 15c
3_	(CODE 1005.06) - 14"BATS REMOVE 4 BOLTS	9	A B G A B P A
4	REMOVE 480LTS		
	(CODE 1005.03)		A B G A B P A
5	WALK TO 1ST LOCATION		A B G A B P A
	11111 #3		A B G A B P A
6	WALK TO LOCATION #3	-	A B G A B P A
	WALK TO LOCATION #4		ABGABPA
7	VARCIC TO COCH TION 4. 1		A B G A B P A
	WALK TO LOCATION #6		A B G A B P A
8			A B G A B P A
9	WALK TO TOOL BAG		A B G A B P A
7			A B G A B P A
			ABGMXIA
		ļ	A B G M X I A
			A B G M X I A
		ļ	A B G M X I A A B G M X I A
		 -	A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
		<u> </u>	ABGABP ABPA .
		<u> </u>	ABGABP ABPA -
			ABGABP ABPA .
			A B G A B P A B P A B G A B P A
			A B G A B P A B P A
		 	A B G A B P A B P A
		2	
		3	860 86 2859 4 11,436
	.,	4	410 4 169
TIME	=		14.606
1 1141 5			17,606

MOST - calculation

3001.08
DATE 7/2/84
SIGN. T/-

WASTE HEAT BOILER INSTALLATION

PAGE 10-88

ACTIVITY	TACK	PADS	TO	BOILER		
CONDITION	S 1400 (1)		10-1			

NO. METHOD GANTRY CRANE POSITIONS 1 A B G A B P A B G A B P A B G A B P A B G A B B B A B G A B B B A B G A B B B B B B B B B	CONDI	MODULE AREA			
BOILER ON SIDE 2	NO.	METHOD	NO.	SEQUENCE MODEL FR 1	TMU
1, 2, 3			1		0
1, 2, 3	1	BOILER ON SIDE	2		
3	2	POSITION CHOCKS AT LOCATION	3	A, B, G3 A3 B0 P3 A3 3	570
10 NO.4 A B G A B P A SAB G A B P A	<u> </u>	1, Z, 3	•		
1, 2, 3	3				
1, 2, 3		POSITION WELDING ROD AT LOCATION	1		5/0
S	14	1.2.3	- -		
1	-	POSITION WELDING ROD AT LOCATION	1	A B G A B P A	
A B G A B P A A B P A A B G A B P A A B P A A B G A B P A A B P A A B G A B P A B P A A B G A	J	45.6		A B G A B P A	
7 CHANGE ROD A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A B G A B P A A B G A B P A B P A A B G A B P	1			 	
8 CANTRY CRANE POSITION 5 BOILER A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A B P A A B G A B P A B B G A B P A B B G A B P A B P A B P A B B P A	6	@ 24 PLACES).			
CANTRY CRANE POSITIONS BOILER A B G A B P A	7	CHANGE ROD	}		
O IN UPRIGHT POSITION	<u> </u>	CANTON COANE POSITIONIS ROLLER			
9 CHELK GAP WITH FEELER A B G A B P A 10 NO. 4 11 A B B G A B P A 11 A B B G A B P A 12 A B G A B P A 13 A B G A B P A 14 A B B G A B P A 15 A B B G A B P A 16 A B B G A B P A 17 A B B G A B P A 18 A B G A B P A 18 A B G A B P A 19 A B G A B P A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G A B P A B P A A B G A B P A	8				
A B G A B P A S S S S S S S S S	<u> </u>	CHELK GAP WITH FEELER			·······
FINAL POSITIONING IN	19				
NO.Y	1.0		6		3,000
A B G M X I A A B G M B P A B P A A B B G M X I A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A	10	ио. Ч		 	480
A B G M X I A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A B P A A B P A B P A A B P A B P A A B P A B P A A B P A B P A A B P A B P A A B P A B P A A B P A B P A A B P A B P A A B P A B P A A B B P A B P A A B P A B P A A B B P A B P A A B P A B P A A B B P A B P A B P A B P A A B B P A B P A B	11		7		420
A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M B P A B P A A B G A B P A B P A		IN NO.C			
A B G M X I A A B G M X I A Q A B G M X I A Q A B G A B P A B P A A B G A B P A B P A					
A B G M X I A 9 A B G M X I A 9 A B G M X I A 10 A B G A B P A B P A A B G A B P A B P A					
A B G A B P A B P A A B G A B P A B P A					
A B G A B P A B P A A B G A B P A B P A			9	A, B, G, A, B, P, A, M, W) A, B, P, A, (48) 16	.550
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A					,
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A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A				\$	
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A				<u> </u>	
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A			 	<u> </u>	
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A			 	 	
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A B G A B P A B P A					
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TIME = 31,560					
TIME = 39,560	-		 		
TIME = 39,560			-		
TIME = 39,560	}		<u> </u>		
	TIME	; a		39,54	50

MOST - calculation

3001.09

DATE 7/2/84 SIGN. TLC

WASTE HEAT BOILER INSTALLATION PAGE 10-89

ACTIVITY LOCATE BOILER

CONDITIONS	λΛ	10111	= A	RED	
	IVI	UUUL	$\cdot \vdash \land$	$\Lambda C \Lambda$	

NO.	METHOD	NO.	SEQUENC	E MC	DEL					FR	TMU
,	GANTRY LOCATES BOILER IN	1	А	В	G	A	В	Р	A	1	- 0
	APPROXIMATE LOCATION	2	(A ₁	B∠	G,	A3	B _/	P-,) A 6	(8)	1,66
_	GET AND PLACE HYDRAVUL	3		В			Be			18)	1,66
2	JACK	5			G,			P3	AO	8	960
$\overline{}$	PLACE STOP FIXTURE	10			G ₃		B 0		AO	8	1.1 2
3				В	G	A	В	P	A		
4	WELD STOP FIXTURE		A	В	G	Α	В	P	Α		
			A	В	G	Α	В	Р	Α		
5	REPOSITION HYDRAULIC JACK		A	В	G	A	В	P	Α		
			A	В	G	Α	В	Р	Α		
6	PUMP JACK 13 TIMES TO MOVE		A	В	G	Α	В	Р	Α	ļ	
٥	BOILER (APPROX. Y8 - YY")	<u> </u>	}		G	Α	В	Р	Α	ļ	<u> </u>
フ	USE STRAIGHT EDGE TO	<u> </u>			G	Α	В	Р	_ <u>A</u>	ļ	
	CHECK STRAIGHTNESS		 	В	G	Α	В	P	<u> </u>		<u> </u>
	MEASURE TO CHECK DIMENSIONS OF		 		G	A	В	Р	Α	 	
	BOILER LOCATION BURN OUT WELD STOP FIXTURE		 		G	<u> </u>	В	<u>P</u>	<u> </u>	-	<u> </u>
9	BORN OUT WELD STOLL IN TOKE		 		G	A	В	P	<u> </u>	 	
	(0.107 MIN./IN. 1/4 WELD - 2 MH/SIDE) REMOVE WELD STOP FIXTURE AND	4	(A ₃		G_	A M,	в ×67	P	A A 6	(0)	6,300
10	REMOVE HYDRAULIC JACK	6		B ₀						(13)8	
	Kerrott Filotolic SH all	9		8 ₆			<u>^0</u> (X14			(z) 3	352
		/			G	M	X CAR	<u>1</u>	A.	\ <u>L</u> / ;	224
					G	M	×	$\overline{}$	A		<u>_</u>
			А	₿	G	М	х	1	A		
			А	В	G	М	×	1			
			Α	8	G	М	X	ı	A		
		7	A 3 BOG 3	A _O (f	, P	Az Mi)A6	B _o P _i	Ao	(4)	93.
		8	AI BG G3							16)	269
			ABG				A	ВР	Α	(, ,
			ABG	A B	Р		A I	3 P	Α		
			ABG					ВР			
			ABG					3 P			
			A B G					3 P			
			ABG					3 P		<u> </u>	
			ABG					3 P			
			A B G					3 P			
			ABG					P			
			A B G					3 P			
			A B G					3 P			
					·			•			
											 ,

MOST - calculation

3001.10
DATE 7/2/84
SIGN. 746

WASTE HEAT BOILER INSTALLATION

PAGE 10-90

CONDITIONS CONDITIONS

NO.	METHOD	NO.	SEQ									FR	TMU
•	POSITION ROD		<u> </u>	<u> </u>	В	<u>ر</u> و	1	(A 3	B6	P-	3)A3	(24)	3010
<u> </u>		4		Α		G		Α	В	P	A		0
2	TACK WELD	5		Α	В	G		<u> </u>	В	P	Α		0
<u> </u>	(.143 MIN/IN @3"/TACK @24 PLACES	ļ		A	В	G		A	В	P	A		
3	CHANGE RODS			Α	В	G	_	Α	В	Р		ļ	<u> </u>
	ALUTON COANE DEMONES	 	_	<u> </u>	B	G G		A	В	P	A		
4	GANTRY CRANE REMOVES		-	A	- <u>B</u>	G		A	B B	P			
	BOILER PRODUCTION WELDER WELDS	+	 	^ _	В	G		<u>^</u>	<u>B</u>	P	$-\frac{2}{A}$		
5	PAOS COMPLETE	-		<u>^</u>	В	G	_	A	В	P		 	-
	THUS COPIL DE 12	 		<u> </u>		G		A	В	P		 	
	·			A	В	G		A	В	P	A	-	
				A	8	G		A	В	P	A		
				Α	В	G		Α	В	P	Α		
				Α	В	G		Α	В	Р	Α		
				Α	В	G		Α	В	Р	Α		
				A	В	G		Α	В	P	A		
		 		Α	В	G	_	Α_,	В	<u>P</u>	Α		
	•	2		<u> </u>				M ₁ (,		(3)24	18,00
		13					_	M3				6	42
		-		<u>A</u>	В	G	_	<u>M</u>	×	<u> </u>	A	-	
		 		A	ВВ	G		M	$\frac{x}{x}$		A	 	
				A	B	G		M	$\frac{x}{x}$		A		
		 	 	A	В	G		M	×	ī	A	 	
				Α	В	G		М	x	1	A	,	
			A £	3 G	Α	В	P		Α	В	РА		
			A E	3 G	Α	В	P		A	В	РА		
			A E	3 G	Α	В	P		Α	В	PA		
			A E	3 G	А	В	P		Α	В	P A		
			A E				_				Α .		
		<u> </u>	A B	-			~				A	ļ	
			A B								A .		
			A E								A		
			A B			_					2 A	 	
		1	A B								PA	 	
		-	A B								A		
		 	АВ				_				A A	 	
			A B								- A		
		}									······································		
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MOST - calculation

3001.//
DATE 7/2/84
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PAGE 10 - 9/

WASTE HEAT BOILER INSTALLATION

ACTIVITY

BURN PAD TO BOILER WELD

NO.	MODULE AREA	NO.	SEQUENCE MODEL	7	T : :
140.	THE THOS	10.	· 	FR	/2
1	GET TORCH LINES, REPLACE	3	<u> </u>	5	
	dov token zives, he mes	4	A BO GS A BO PS A		<u> </u>
2	CONNECT & DISCONNECT LINES	6	A BO G A BO PS AO		6
		11	A 0 B 0 G A 3 B 6 P 3 A 0		
3	PLACE GLOVES, REMOVE GLOVES GOGGE	12	A B G A B P A		† <u> </u>
.1	0 0 0 0 0 0 0		A B G A B P A		
4	PLACE GOGGLES		A B G A B P A		\bot
5	Dan 1 & 0 Va		ABGABPA	4	
<u>.</u>	OPEN & CLOSE VALVES	 -	A B G A B P A		
6	GET FRETURN STRIKER		A B G A B P A	┼	↓ —
.w	GETT RETURN STRIKEN		A B G A B P A	+	 - .
7	LIGHT TORCH		A B G A B P A	 	
			A B G A B P A	+-	
8	ADJUST FLAME		ABGABPA	 	
^			A B G A B P A		
9	Lower Goggles		A B G A B P A		
		5	(A1 B0 G1 M1) X0 10 AD	(z)2	
10	RAISE GOGGLES	<u>_Z</u>	A B G G M I XO ID A		1_2
	Cod mine t Woods!	8	A, Bo G, M, Xo I o Ao		
11	POSITION TORCH		A, BO G, M, XO 1, AO	-,	5
12	ASIDE TORCH	12	A B G M (X81) 10 A	2.4 (3)24	58
-65-	ANIBL TORCO	12	A B G M X I A	13)41	120
13	BURN (.463 MIN/INCH @ 3"/TACK@ 24 TACKS		A B G M X I A	 	
		2	10 BO GO AO BO (FIA 1 F54) 1 BO PIA	(2)2	23
•			ABGABP ARPA		
			ABGABP ABPA		<u> </u>
			A B G A B P A B P A		 _ _
	<u>.</u>		A B G A B P A B P A	-	 _
			ABGABP ABPA	 	-
l			ABGABP ABPA	 	 -
			ABGABP ABPA	 	
			ABGABP ABPA		
			ABGABP ABPA	1	
			ABGABP ABPA		
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			ABGABP ABPA		<u> </u>
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TIME	.			66.	440

MOST - calculation

3001.12 DATE 7/2/84

WASTE HEAT BOILER INSTALLATION

PAGE 10-92

ACTIVITY LAYOUT, DRILL & SPOTFACE HOLES

	"LAYOUT, DRILL & SPOTFA TIONS MODULE AREA METHOD	NO.	SEQL			ODE					FR	TMU
1	LAYOUT HOLES	2.	-	40	B	G	(A ₃	B	8)		6)5	3000
-	(CODE 1003.20)		 	A	8	G	A	В	Р	Α	<u> </u>	<u> </u>
2	TRAVEL .		 -	Α	В	Ģ	Α	В	P	A	<u> </u>	
	0.1.7.11.00.11		+	<u> </u>	В	G	<u> </u>	В	<u>P</u>	<u>A</u>	ļ	
3	POSITION DRILL		 -	<u> </u>	<u>B</u>	G	_ <u>A</u>	В	P	<u>A</u>	├ ─-	
	(CODE 1004.11) PLUG IN EXTENSION CORD		 	<u>A</u>	B	G G	A	B B	P	A A	┼	
4	CCOOL 1000 13		 	<u>~</u>		G	_ <u>_</u> _	В	- F		┼	
	(CODE 1004.13) CHANGE DRILL BIT		!	<u></u>	В	G		B	P	_ <u>^</u>	┼──	
5	(CODE 1004.14)		┼	<u>~</u> А	В	G		В	P	A		
	(CODE 1004.14) HAND FEED DRILL BIT		 	<u></u>	В	G	A	В	- <u>-</u> -	A	 	
6	(CODE 1004.15)		+	A	В	G	A	В	P	A	1	
	(COOE 1004.15) DRILLING PROCESS TIME Y4" HOLE		 	A	В	G	A	В	Р	A	1	
7	MATERIAL CODE DOIS -1" DEPTH			A	В	G	Α	В	Р	Α		
8	MATERIAL CODE 0013 -1" DEPTH DRILLING PROCESS TIME 3/4" HOLE			Α	В	G	Α	В	P	A		
0	MATERIAL CODE DOIS -1" DEPTH DRILLING PROCESS TIME ISH!" HOLE			A	В	G	Α	В	Р	Α		
9	DRILLING PROCESS TIME 15/16" HOLE			A	В	G	Α	8	Р	Α		
1	MATERIAL CODE OOIS -14 DEPTH			Α	В	G	Α	В	Р	A		
10	SPOT FACING (FACE MICLING)		-	A	В	G	М	Х		Α_	<u> </u>	
10	PROCESS TIME015" DEPTH		<u> </u>	<u> </u>	В	G	М	X		<u> </u>	L	ļ <u> </u>
:				<u> </u>	В	G	М	X		<u> </u>	ļ	<u> </u>
				<u> </u>	B	G	M	<u>×</u>	$\frac{1}{1}$	<u>A</u>		ļ
١			} 	A			M	×	-	<u>A</u> _		
			 	<u>A</u>	8 B	G	M M	×	-		 	ļ
!			├	<u> </u>	В	G	M	$\frac{x}{x}$.	<u>A</u>	├	
			АВ						В		┼	
			<u> </u>			ВР				• A	 	
						ВР				A	 	
						ВР			B F			
						B P			B P		1	
			А В						B F			
			А В						ВР			
			АВ	G	A	в Р		Α	ВР	, A		
			АВ	G	Α	вР		Α	B P			
		1							_	323	14	452
		3								740	56	41,440
		4	<u> </u>							960	<u> </u>	2961
	· ·	5	 							400	4	9,60
		6								530	56	29,68
	,	7								293	14	4/02
		8								118		5,852
	ì		 						_	<u>637</u>	14	8,918
		10	<u> </u>							<u>514</u>	14	7,196

MOST - calculation

3001.13 DATE 7/2/89

SIGN. 7/2/89

WASTE HEAT BOILER INSTALLATION

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ACTIVITY BOLT-UP WITH TEMPORARY BOLTS

COND	MODULE AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
	PAINTER PAINTS FOUNDATION	1	A B G A B P A
1		Z	A B G A B P A
	GANTRY MOVE BOILER ONTO	5	A, B, G, A, B, P, A, 14 1.12
Z	FOUNDATION	8	A 3 B 6 G 0 (A 3 B 6 P) A 6 (14) 1,4/
3	FOUNDATION SET-UP TO BOLT-UP	L	A B G A B P A
<u> </u>	(CODE 1005.01) POSITION BOLT	<u> </u>	A B G A B P A
4	POSITION BOLT	<u> </u>	A B G A B P A
	((00E 1005.03)		A B G A B P A
5	PLACE .006" SHIM	<u> </u>	A B G A B P A
	0	-	A B G A B P A
6	BOLT-4P (CODE 1005.06) - 15/16 BOLT	├	A B G A B P A A B G A B P A
	CHECK PAPS WITH FEELER	-	A B G A B P A
7	GAGE		A B G A B P A
	TRAVEL	 	A B G A B P A
8	177086		A B G A B P A
			ABGABPA
			A B G A B P A
	•		A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			ABGMXIA
			A B G M X I A
			A B G M X I A
		<u> </u>	A B G M X I A
		7	A3B63A0(B6P, A, M24)A6B6P3A0 (24) 843
			A B G A B P A B P A '
		<u> </u>	
			A B G A B P A B P A B G A B P A
			ABGABP ABPA
			ABGABP ABPA
		\vdash	ABGABP ABPA
		 	ABGABP ABPA
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
		3	860 14 12,04
		4	410 14 574
-		6	2859 14 40,0
TIME	=		68,766

MOST - calculation

3001.14

DATE 7/2/84

SIGN. TLC

	1,240=- 1,54= 00			SIGN. TLC		
	WASTE HEAT BOILER			PAGE 10-9	4	
	"ITY BOLT-UP WITH PEKMANENT	BOL	.75	···		
CONDI	MODULE AREA					
NO.	METHOD	NO.	SEQUENCE MODEL		FR	TMU
,	UNBOLT TEMPORARY BOLTS	4	A, Bo G3 A,	BOP3 AD	14	1120
1	((ONE 1005.06)-15/16 BOLTS REMOVE TEMPORARY BOLTS	7	AO BO GO A	Bo Pa A	14	700
2	REMOVE TEMPORARY BOLTS	<u> </u>	A B G A	в Р А		
	(CODE 1005.03)	<u> </u>	A B G A	B P A		
3	POSITION PERMANENT BOLTS		A B G A	в Р А	<u> </u>	
	(COOE 1005.03)	├	A B G A	B P A	 -	
4	INSTALL SHIMS		A B G A	B P A	ļ	<u> </u>
	BOLT-UP WITH PERMANENT BOLTS	 	A B G A	B P A	 	
5	(CODE 1005 DT)-15%" BOUTS	\vdash	A B G A		 	
	(CODE 1005.07)-15/6" BOUTS CHECK PADS WITH FEELER GAGES	 	A B G A	B P A	-	
6	mile mil in a section to another me.	\vdash	A B G A	B P A		
<i>P</i> 7	TACK WELD PERMANENT BOLTS	<u> </u>	A B G A	B P A		
7	18"/BOLT @ . 21 MIN/ INCH		A B G A	в Р А		
8	REMOVE SHIMS WITH PLIERS		A B G A	в Р А		
D			A B G A	в Р А		
			A B G A	в Р А		
			A B G A	в Р А		
	•	7	(A3 BO G M	X32 10) A6	(14)	5240
		12	A, B, G, M,	X0 6 40	14	420
			A B G M	X I A		
		ļ	A B G M	X I A		
			 			
			A B G M			-
		 	A B G M	X I A	 	
······		/	A 3 B 6 G A 6 B 6 P, A 3 M2		(211)	0420
		8			(14)	
		-	A B G A B P	ABPA	1131	11,50
			ABGABP	АВРА		
			A B G A B P	АВРА		
			ABGABP	ABPA		
			ABGABP	АВРА		
	·		ABGABP	ABPA		
			ABGABP	ABPA		
			ABGABP	ABPA		
			ABGABP	ABPA		
			ABGABP	ABPA		
			A B G A B P	A B P A		
		-,	N O G M P P	· · · · · · · · · · · · · · · · · · ·	111	110000
l		2		2859 410		40,026
		3		410	14 14	5,740
		~				
		<u> </u>	L	1000		68,040
TIME			····		136	576

MOST - calculation

CODE 3002.01

5-15-84

151,100

EWM

ALD CONDITIONING PLANT INSTALLATION

PAGE 10-95

	AIR CONDITIONING PLANT	INST	ALLA:	10	<u>N</u>		PAG	E	10-	75	
ACTIV											
OND	JOB PREPARATION TIONS										
	ASSEMBLY & MODULE ARE	A									
NO.	METHOD	NO.	SEQUE	NCE	MODE	L.				FR	TMU
			A	В	G	A	В	Р	Α		=
1	AVE. INITIAL JOB PREPARATION		А	В	G	Α	В	P	A		-
	_		А	В	G	Α	В	Р	Α		
	(CODE 1001.12)	<u> </u>	A	В	G	Α_	В	Р	A	<u> </u>	ļ
_			A	В	G	Α	В	Р	<u> </u>	<u> </u>	<u> </u>
2_	OBTAIN OR RETURN TOOLS		A		G G	A	<u>B</u>	P P	A A	 -	
	FREE STOCK OR TOOL CRIB	-	A	8	G	- <u>A</u>	_ <u>B</u>	- <u>-</u> -	- <u>A</u>		
	FREE STOCK OR TOOL CAID	 `	A	В	G		В	P	_ <u>_</u>	-	
	(CODE 1001.121)	-	A	В	G	A	В	P	A		
	100.00		A	В	G	A	8	P			
3	AVE. ADDITIONAL JOB		Α	В	G	Α	В	P	A		
	_		A	8	G	A	В	Р	Α		
	PREPARATION (CODE 1001.22)		A	В	G	Α_	В	P	A		<u> </u>
			A	В	G	Α	8	P	Α		
			A	В	G	Α.	В	Р	Α		<u> </u>
			A		G	A	В	P	<u>A</u>		
			A	B B	G G	A M	<u>в</u> х	P	A	-	
			A		G		^	'	A		
			A	<u>B</u>	G	M	$\frac{\hat{x}}{x}$	- 	- <u></u>		
			A	₿	G	М	х	1	A		
			А	В	G	M	×	ı	Α		
			А	В	G	M	Х	ı	Α		
			A	В	G	M	X	ı	A		
			A	В	G	M	<u>X</u>	_	_ <u>A</u>		ļ
					ВР			B P			<u> </u>
			ABC		B P		A A	B P	<u>A</u>		
			A B								l
			A B C					B P			
			A B C					B P			
			А В С	_				в Р			
			АВС	A	ВР		Α	ВР	Α		
			АВС					в Р			
			АВС					ВР			
•			A B G					ВР			
			A B G					B P			
			ABG					B P			
		1	7 3 6						001		42,0
		2			-		 -		417		925
		3							597	9	165
								<u> , or , </u>	- <u>-</u>		· -,-

TIME =

MOST - calculation

CODE 3002.02 DATE 5-15-84 SIGN. FWM

AIR CONDITIONING PLANT INSTALLATION

PAGE 10-96

ACTIV	TAIR CONDITIONING PLAN		N.S.I.A.		17.10	<u> </u>	+	•			
CONDI	AREA TRAVEL	<u></u>					· · · · · · · · · · · · · · · · · · ·				· · · · · ·
	ASSEMBLY & MODULE ARE	r	<u>, </u>							·,	,
NO.	METHOD	NO.	SEQUEN						 _	FR	TMU
	Francisco Company and Company		A	В	G	_ <u>A</u>	В	P		ļ	ļ
	FROM TOOL BOX TO WETDOCK		A	<u>B</u>	G	A	B	P	A		
	TOOL RM & RETURN (CODE 1002.16)	 	A	В	G	_ <u>A</u>	В	P		┼─	
	TOOL NA TRETURN (CODE TOOLS OF		A	В	G	A	В	P	A	╁	
2	FROM TOOL BOX TO FREE STOCK		Α	В	G	A	В	Р	Α		
			A	В	G	A	В	Р	A		
	RETURN (CODE 1002.17)	<u> </u>	A	В	G	Α_	В	Р	Α	ļ	ļ
0	Co 5.4 8-4 140 114		A	В	G	Α_	В	Р	A	<u> </u>	ļ
3	FROM TOOL BOX TO AMR #1	 - -	A_	<u>B</u>	<u>G</u> _	_ <u>A</u>	<u>B</u>	<u>P</u> _	_ <u>A</u> _		
	ON MODULE 2 & RETURN	 -	A	B	G G	A A	B B	<u>Р</u> Р	<u>А</u> А	 	
	•	 	A	8	G	A	<u>B</u>	P	_ A	 	 -
	(CODE 1002.18)		А	В	G	A	В	Р	A		
			А	В	G	A	В	Р	Α		
4	FROM TOOL BOX TO BAY!		А	В	G	A	В	Р	Α		
	A LO CLANT (100 FT)		A	В	G	Α	В	P	Α	ļ	ļ <u>.</u>
	LOCATION OF A/C PLANT (488 FT)		A	B	G G	A	B X	P	<u>A</u>		
			-	В	G	M M	_ <u>^</u>	 -	- A	-	-
			A	В	G	M	$\hat{\bar{x}}$		A	 	
			A	В	G	М	X	1	A		
			А	В	G	М	х	Ī	Α		
			A	В	G	M	х	1	A		
			A	В	G	M	X		A	<u> </u>	<u> </u>
			ABG	<u>B</u>	G B P	м	<u> </u>	B	A	-	
			A B G		B P				- - -		
			A B G		B P		A		A	-	<u> </u>
			A B G	A	ВР		A	В	• A	-	
			A B G	Α	ВР		A	ВБ	° А		
			A B G					В			
			A B G					ВБ		<u> </u>	<u> </u>
			A B G					В		├	
			A B G					B F			
			A B G					В		 	
			A B G	_				B F		 	
			A B G					ВБ			
			A B G	Α	ВР			ВЕ			
		1						11,3		4	45,244
		2	1						60	4	7840
		3							270	2	4540
		4	<u> </u>					33	70	2	6740
TIME	-										64,364
FORM	1 R-1458										· · · · · · · · · · · · · · · · · · ·

FORM R-1458

MOST - calculation

3002.03

DATE 5-15-84

AIR CONDITIONING PLANT INSTALLATION PAGE 10-97

ACTIVITY LAYOUT & DRILL LEG STANDS

COND	ASSEMBLY & MODULE AREA										
NO.	METHOD PAGE ASEA	NO.	SEQUEN	ICE M	IODE					FR	TML
		9	AG	Во	G_{c}) (A 6	,) B c	<u>ه</u> د	Αo	(6)4	1440
Ш	LAYOUT TO DRILL WITHOUT TEMPLATE		A	В	G	Α	В	Р	Α		<u> </u>
	(CODE 1003.10)	<u> </u>	A	В	G	A	В	Р	A	 /	 -
	(COUE 1003.10)		A		G G	<u>A</u>		<u>Р</u> Р	A	├ ──	
2	POSITION DRILL (CODE 1004.11)	 	A	 B	G	A	B	<u>-</u> Р	A A	+	-
	_		A	8	G	A	В	P	A	1	
<u>3</u>	PLUG IN EXTENSION (CODE 1004.13)		A	8	G	Α	В	Р	Α		
1	200 100 200 200 100 100 100 100 100 100		A	В	G	<u> </u>	В	Р	Α		
4	CHANGE DRILL BIT (CODE 1004.14)	 	A_	<u>B</u>	G	A_	В	<u>Р</u>	Α		
5	HANDFEED DRILL BIT TO \$ FROM		A		G G	_ <u>A</u> _	В	<u>Р</u>	A		 •
<u> </u>	THE PROPERTY OF THE PARTY OF TH		A	B B	G	<u>А</u>	<u>B</u>	P	_ <u>A</u>	 	· ·
	WORKPIECE (CODE 1004.15)		A	В	G	A	В	P		+	<i></i>
,			А	В	G	A	В	P	A		
6	PROCESS TIME TO DRILL 18" DIA.		А	В	G	A	В	Р	Α		
_	day of the bodde on dans and	'	А	В	G	Α	8	Р	Α		
	HOLE (MAT'L. & COND. CODE 0013	<u></u>	A	В	G	<u>A</u>	В	Р	A	\Box	
	@ 1/2" DEPTH)		A	B	G	M	X	1	A	 	
			A	<u>8</u> 8	G	M M	×	1 1	A	\vdash	····
7	PROCESS TIME TO DRILL 25/32" DIA		A	B	G	M	X	' -	A		 -
			A	8	G	M	x	<u>.</u>	A		
	HOLE (MAT'L. & COND. CODE DO13		А	В	G	М	х	1	Á		· · · · · · · · · · · · · · · · · · ·
-			A	В	G	М	Х	ı	Α		
	e 1/2" DEPTH)	لــــــا	A 8 G	8	G	М	X	1	A		
8	PROCESS TIME TO DRILL 29/32" DA		A B G		B P			B P		1	
	LKOGESS HILVE TO NEITT 125 24.		A B G		B P B P				A		
	HOLE (MATL. & COND. CODE	,	A B G		ВР		A		A		
			A B G		ВР				A		
	0013 @ 1/2" DEPTH)			A B	 -			ВР			
<u>^</u>			A B G					в Р			
9	MOVE WITH EQUIP TO EACH LEG		A B G					B P		$\overline{\longrightarrow}$	
-	STAND TO LAYOUT & TO DRILL .		A B G					B P			
	STAND TO LAYOUT 7 TO DRILL		ABG	<u>A</u> b	3 P			B P		10	2.10
ļ	<u> </u>	2	r					740			94.5. 100.65.
	Γ	3	1		—			2960		1	2960
		4						400		8	19,2
	1	5						530)	136	72,08
		. 6						122		68	8296
	l	7	-					250		32	800
		8	<u> </u>					324	<u>-</u>		11,66
TIME	=									318,	,800

MOST - calculation

CODE

3002.04

DATE 5-15-84

SIGN. FWM

AIR CONDITIONING PLANT INSTALLATION

PAGE 10-98

<u> </u>	I AIR CONDITIONING PLAN		NSTALLATION PAGE 10-78
ACTIV	INSTALL DUMMY MOUNTS & LE	EG 3	STANDS
CONDI	TIONS ASSEMBLY & MODULE AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
		4	A BO G A BO P3 AO /2 720
1	SET UP TO BOLT (CODE 1005.02)	9	A/ BO G3 A6 BO P3 AO 12 1560
			A B G A B P A
2	LOOSEN THEN TIGHTEN 12" BOLT	<u> </u>	A B G A B P A
	1000	<u> </u>	A B G A B P A
	(CODE 1005.04)	ļ	A B G A B P A
2	Annua mini Carmail Part	<u> </u>	A B G A B P A
3	REMOVE THEN POSITION BOLT	 	A B G A B P A
	(CODE 1005.03)	├	A B G A B P A
	((() () () ()	 	A B G A B P A
4	REMOVE & REPLACE MOUNTS	 	A B G A B P A
	TOTAL FRANCISCO MICONIA		A B G A B P A
5	POSITION LEG STANDS		A B G A B P A
			A B G A B P A
6	SET UP TO BOLT (CODE 1005.02.)		A B G A B P A
	<u> </u>		A B G A B P A
7	POSITION BOLT (CODE 1005.03)		A B G A B P A
8	761 /	5	A3 B O G3 M3 X O 16 A O 6 900
0	TURN 7/8" BOLT (CODE 1005.04)		A B G M X I A
9	MOVE WITH EQUIP TO EACH		A B G M X I A A B G M X I A
	MINE MINEMALL IN ENCH		A B G M X I A A B G M X I A
	LEG STAND.		A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
		1	970 970
_		2	1676 24 40,244
		3	410 24 9840
		6	970 970
		7	410 36 14,760
		8	987 36 35,532
TIME			105,496

MOST - calculation

300Z, 05

DATE 5-15-84

SIGN. FWM PAGE 10-99

AIR CONDITIONING PLANT INSTALLATION

ACTIVITY

CHECK SNUBBER ALIGNMENT

CONDITIONS

	ASSEMBLY & MODULE AREA				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
	_	1	A, BOG, A, BOP, AO	8	320
1	PLACE SNUBBER CONES IN SOCKETS	2	A / B O G 3 A / B O P3 A /	8	- 720
		9	A, B O G, A, B O P, A O	8	320
2	PLACE ON LEG STANDS	10	A 0 B 0 G 0 (A 6) B 0 P 0 A 0	(6)5	1800
3	SET UP TO BOLT (CODE 1005.01)	<u> </u>	A B G A B P A		
<u> </u>	JET OF TO BOLL (CODE 1003.01)	 	A B G A B P A		
4	POSITION & REMOVE BOLT FOR CONE	 	A B G A B P A		
	- COLLINA PACINOVE DOCS FOR COVE		A B G A B P A		
	(CODE 1005.03)		ABGABPA		
			ABGABPA		
5	TIGHTEN & LOOSEN 1 1/2" BOLT		ABGABPA		
	•		ABGABPA		
<u></u>	(CODE 1005.06)	<u> </u>	ABGABPA		
/	Ser do - Pour Come cons -1)	 	A B G A B P A		
6	SET UP TO BOLT (CODE 1005.01)	 	A B G A B P A		
7	POSITION & REMOVE BOLT FOR SOCKET	 	A B G A B P A		
	TOSITION I REPUBLIC BODI FOR DOCKE!		A B G M X I A		
	(CODE 1005.03)		A B G M X I A		
			A B G M X I A		
8	PLACE ALLEN WRENCH, TIGHTEN &		ABGMXIA		•
			A·B G M X I A		
	LOOSEN (MINIMAL TO CHECK)		A B G M X I A		<u> </u>
9	DEMANGE ASSEMBLIES FORM		A B G M X I A		
7	REMOVE ASSEMBLIES FROM	8	A, BoG, Ao BdP3A, F24 A BoP, Ao	(2) 0	102/10
	LEG STANDS	0	ABGABP ABPA	818	18,2401
	CEG STARUS		A B G A B P A B P A		
10	MOVE WITH EQUIP TO EACH		A B G A B P A B P A		
			ABGABP ABPA		
	LEG STAND		ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA	\longrightarrow	
			ABGABP ABPA		
			ABGABP ABPA ABGABP ABPA		
			ABGABP ABPA		
		3	860		860
		4	410	16	6.560
		5	2859		45744
		6	860		8601
		7	410	64	26,24
TIME	- 				664
				101,	007

MOST - calculation

CODE 3002.06 DATE 5-15-84 SIGN. FWM

AIR CONDITIONING PLANT INSTALLATION PAGE 10-100 ACTIVITY INSTALL PERMANENT LEG STAND BOLTS & RAISE UNIT CONDITIONS

	ASSEMBLY & MODULE AREA										
NO.	METHOD	NO.	SEQUEN	CE M	ODEL					FR	TMU
		1	A	В	G	Α	В	Р	Α		0
	PLACE PLANT ON MODULE	2	A	В	G	A	В	P	Α		0
		6		B6			B6			2	1060
2	WELD LEG STANDS IN PLACE	9				A/6				2	980
2	C 10 - 2017 (200 100 07)	12				(A 6				(6)3	1080
ے_	SET UP TO BOLT (CODE 1005.02)	 	A .	В	G	<u> </u>	<u>B</u>	P P	A		
,,	LOOSEN 78" BOLT		A	8	G	A	B B	P	A		
4	LOOSEN 10 BOLI		A	B	G	<u> </u>	В	P	A		
	(CODE 1005.04)	 	A		G	A	В В	· P	Ā	-	
	(2002 1000 30 4)		A	В.	G	A	В	P	- 		
5	REMOVE BOLT (CODE 1005.03)		Â	В	G	A	В	· P	A		
	AEMORE REEL (CORE TOURS TOUR		A	В	G	A	В	P	A		
6	GET HYDRAULIC JACKS & HANDLES.		А	В	G	Α	В	P	A		
₩			_ A	В	G	Α	В	Р	A		
	& PLACE UNDER PLANT		А	В	G	Α	В	P	Α		
			A	В	G	Α	В	P	Α		
7	PLACE HANDLE & JACK UNIT UP		Α	В	G	A	В	P	Α		
			A	В	G	M	x	ı	Α		
8	JACKUNIT DOWN & ASIDE HANDLE		A	В	G	М	х	1	Α		
_			Α_	В	G	M	X	1	<u>A</u>		
9	REMOVE JACKS		A	<u>B</u>	G	M	X	1	<u>A</u>		
	0		A	B	G	M	X	1	<u> </u>		
10	POSITION BOLT (CODE 1005.03)	 	A	B	G	M M	×	!	A .		
11	TIGHTEN 7/8 BOLT (CODE 1005.05)	 	A	В	G	M	$\frac{x}{x}$	 	A		
	TIGHTEN . 8 DOLT [CODE 1003.03]	7	A/BOG							2	(00
12	MOVE WITH EQUIP TO EACH	8	A /B oG							2	600 560
	THUTE WITH CHOIF TO LAND	8			B P	- 24		3 P		-	200
	LEG STAND			A				3 P			
					ВР			3 P			
	,		A B G	A I	ВР		A E				
			A B G	A	ВР		A E	P t	A		
			A B G	A E	3 P		A	3 P	Α		
			A B G					3 P			
			A B G					3 P			
			A B G					Р			
			A B G	_				Р			
			A B G	_A I	ВР		АВ	P			0==
		3	-						770	-	970
		4	<u> </u>						987		35,532
		5	 						410	26	14,760
		10	 						131		14,760 51,516
 -			<u> </u>						101		
TIME	-								1	121	,818
5001	0.1450										

FORM R-1458

MOST - calculation

CODE

3002.07 DATE 5-15-84

61,052

SIGN. EWM

AIR CONDITIONING PLANT INSTALLATION

PAGE 10-101

ACTIV	INSTALL RESILIENT MOUNTS (N	vHIL	E U	VI 1	rJ	Γ Δ <i>C</i> :	KET	ን ህ P)			
CONDI	ASSEMBLY & MODULE AREA			•••					<i></i>			
NO.	WETHOD HOSEW DLY 7 MODULE AREH	NO.	SEQU	ENG	CE M	ODE					FR	TMU
		4	 	٠,			Aı	В	Pæ	A _O	12	720
1	SETUP TO BOLT (CODE 1005.01)	7	 	0		Go			Po	Ao	(6)	360
2			Α	<u>, </u>	В	G	Α	В	Р	Α		
2	LOOSEN 1/2" BOLT (CODE 1005.04)		Α		B	G	A	В	P	Α	ļ	
3	REMOVE BOLT (CODE 1005.03)		A		В	G	<u>A</u>	В	P	A	 	
<u> </u>	NEWOVE BOLL (CODE 1003:03)		A		<u>8</u> B	G G	<u>A</u>	B. 	P P	A		
4	REMOVE & REPLACE MOUNTS		A	—	В	G	A	В	Р	A		
	•		Α	`	В	G	Α	В	P	Α		
5	POSITION BOLT (CODE 1005.03)		Δ	\	В	G	Α	В	Р	A		
	TIGHTEN 12 BOLT (CODE 1005.05)		A		В	G	<u>A</u>	В	P	Α		<u> </u>
6	HIGHTEN I'Z BOLT [CODE 1005.05)		A		В	G	<u>A</u>	B B	P	A A	-	
7	MOVE WITH EQUIP TO EACH LEG STAND		A		В	G	_ <u>^</u> _	В		$\frac{\hat{A}}{A}$		
			А		В	G	A	В	Р	A		
			Д	1	В	G	Α	В	Р	Α		
			Α		В	G	A	В	Р	Α		
			A	-	В	G	<u>A</u>	В	P	<u>A</u>	<u> </u>	<u> </u>
			A		В	G G	M	X		A		 :
			A		B	G	M M	×	 	A		
			A		В	G	м	×	1	A		
			A		8	G	М	x	1	A		
	·		Α		В	G	M	x	1	A		
İ			A		B	G	M	_ x _	 -	A		<u> </u>
				G	B A	G B P	M	X	B P	A A		
			АВ	G		3 P				A		
			АВ	G	A	3 P		Α		A		
			АВ	G	A I	ВР		A	B P	Α		
			А В						ВР			
			A B						B P			
			A B		_				B P		<u> </u>	
			A B						B P			
			АВ						ВР			·
			A B						3 P			
			АВ						3 P			
1			A B	G	A E	3 P		A E	3 P			016
		-								60	10	860
		3								76	12	4920
		5								-10	12	4920
	·	6								30		29,166

TIME =

MOST - calculation

3002.08

DATE 5-15-84

SIGN. EWM

AIR CONDITIONING PLANT INSTALLATION

SIGN. FWM
PAGE 10-102

CONDITIONS ASSEMBLY & CARD TO A STA

CONDI	ASSEMBLY & MODULE ARE	Δ			
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
	_	1	A, B, G, A, B, P, A,	8	320
	PLACE SNUBBER CONES IN SOCKETS	2	A/ B D G 3 A/ BD P3 A/	8	720
ما	ALLAS SILVER ATAINS	8	A I B G G S A I B O P S AO	8	1120
2	PLACE ON LEG STANDS	17	A B G A B P A	25	1800
3	SET UP TO BOLT (CODE 1005.01)		A B G A B P A A B G A B P A		
<u> </u>			A B G A B P A		
4	POSITION BOLT FOR CONE		A B G A B P A		
			A B G A B P A		
<u></u>	(CODE 1005.03)	<u> </u>	A B G A B P A		<u> </u>
5	TIGHTEN 1 12" BOLT (CODE 1005.06)		A B G A B P A		
13	TIGHTEN 1'2 ISOLI (CODE 1005.06)		A B G A B P A A B G A B P A		
6	MEASURE VERT. GAP-CONE TO SOCKET	 	A B G A B P A		
	7.10.10.10.10.10.10.10.10.10.10.10.10.10.		A B G A B P A		
7	MARK MEASUREMENT ON LEG STAND		A B G A B P A		
			ABGABPA		
8	DISTRIBUTE LINERS FOR EACH SNUBBER		A B G A B P A	-\-	11.100
9	treat three or rough	9		3)8	
	ALIGN HOLES IN LINERS	10	Ap Bo Go(M1 X0 10 A0	(8)	1360
10	LIFT SOCKET		A B G M X I A	10/	1360
			A B G M X I A		
11	ALIGN LINER SET WITH BOLT HOLES		A B G M X I A		
1.2	S (0 100F 0-1)		A B G M X I A		
14	SET UP TO BOLT (CODE 1005.01)	,	A B G M X I A	(0)	1000
13	POSITION & REMOVE BOLT FOR SOCKET	6		(8)	1880
	TESTION EDMOVE SUCI FOR SUCKET	14	 		100,160
	(CODE 1005.03)	15		(8)	2520
		16		(8)	440
14	PLACE ALLEN WRENCH, TIGHTEN &		ABGABP ABPA		
	100554	· ·	ABGABP ABPA ABGABPA		
	LOOSEN	<u>.</u>	ABGABP ABPA ABGABP ABPA		
15	CHECK FOR 1/8" VERT. GAP		ABGABP ABPA		
1-			ABGABP ABPA		
16	MARK PLACES REQUIRE SHIMS		ABGABP ABPA		
			ABGABP ABPA		
17	MOVE WITH EQUIP TO EACH	3	860		860
	LEC STUD	<i>4 5</i>	410	8	3280
	LEG STAND	12	2859 860	٥	22 872 860
		13		64	26,240
TIME	**************************************		1		
				1/0	,072

FORM R-1458

MOST - calculation

CODE 3007.09 DATE 5-15-84

SIGN. FWM

AIR CONDITIONING PLANT INSTALLATION

PAGE 10-103

ACTIV	CUT OUT SHIMS			
CONDI				
NO.	METHOD	NO.	SEQUENCE MODEL FR	TMU
		1	A10 B6 G1 A10 B0 P3 A0 2	600
	PLACE BOARD & ASIDE	2	A3 B6 G3 A3 B0 P1 A0 2	320
2	DIT TONE ON BOADS & ARISE	5	A, B, G, A, B, P, A, B	320
	PUT TOOLS ON BOARD & ASIDE	7	A, B, G, A, B, P, A, 4	160
3	UNWRAP SHIM STOCK	14	A, B, G, A, B, P, A, Q, 12 A, B, G, A, B, P, A, A	480
		15	A B G A B P A 16	6401
4	UNROLL SHIM STOCK	16	A, B, G, (A, B, P, A, (4)	300
	Prince College Constant	17	A, Bo G, A, Bo P, Ao	4c
5	PLACE SNUBBER SOCKET ON STOCK	19	A OB O GO A , B O P / A O 8	160
6	SCRIBE OUTLINE & HOLES ON STOCK	 -	A B G A B P A A B G A B P A	I
Ø	SCRIBE OUT THE THREES ON STOCK	 	A B G A B P A	
7	REMOVE SNUBBER		A B G A B P A	
			A B G A B P A	
8	CUT STOCK		A B G A B P A	
9	CUT OUT OUTLING		A B G A B P A	
	CUT OUT OUTLINE	4	A B G A B P A A! Bo G M3 X O I O A O 4	200
10	ASIDE SHIMS & SCRAP	11	A 1 B D G 1 M 3 X O 1 O A O	200 50
	70.00 OTTAIN TOCKAL	13	A I B p G I M 3 X o I p A o	50
11	UNROLL TAPE		A B G M X I A	
			A B G M X I A	
12	CUT TAPE		A B G M X I A	'
13	RE ROLL SHIM STOCK		A B G M X I A	
12	RE RUCE SHIM STOCK	3	A ₁ B ₀ G ₁ A ₁ B ₁ C ₃ A ₁ B ₀ P ₁ A ₀	90
14	TAPE SHIM STOCK ROLL & ASIDE		A, B, G, A, B, P, R3) A, B, P, A, (5) 8	2000
			A B G A B P C6 A B P A 6 4	480
15	PLACE SHIM & ASIDE	9	AOBOGOAIBOP, CIL AOBOPOAO 8	1440
	a a sail of Ocean	12	A1 B0 G1 A, B0 P, C3 A1 B0 P1 A0	90
16	GET PUNCH & PLACE		A B G A B G A B G A B B A	248C
17	GET & ASIDE HAMMER		A ₀ B ₀ G ₀ A ₀ B ₀ P ₀ F ₁₆ A ₀ B ₀ P ₀ A ₀ 8 A ₁ B ₀ G ₁ A ₁ B ₀ P ₁ C ₆ A ₁ B ₀ P ₁ A ₀ 4	1280
	GET TASIBE TANKAN		ABGABP ABPA	780
18	HAMMER PUNCH		ABGABP ABPA	
			ABGABP ABPA	
19	ASIDE PUNCH		A B G A B P A B P A	
20	MANAGO SILIN FIAT		A B G A B P A B P A	
20	HAMMER SHIM FLAT		ABGABP ABPA	 ;
21	CUT SHIMS IN HALF			
	C. ONING IN MACE			-
TIME :	=		1.1	720
			111,	120

MOST - calculation

3002.10

DATE 5-15-84 SIGN. EWM

SIGN. FWM PAGE 10-104

AIR CONDITIONING PLANT INSTALLATION

ACTIVITY

INSTALL SHIMS & BOLT DOWN SNUBBER SOCKETS

CONDITIONS

CONDI	ASSEMBLY MODULE AREA										
NO.	METHOD	NO.	SEQUEN	CE MO	DDEL					FR	TMU
		7	A	Bo	G	Aı	Bo	P	A 0		40
	LIFT SOCKET	9	A	Во	G	A	Bo	P6	Ao	32	2880
		11	A	В	G	Α	В	Р	Α		0
2	PLACE SHIM IN ALIGN TO LEG		Α_	В	G	Α	В	P	A		
			A	В	<u>G</u>	<u> </u>	В	P	Α	ļ	
<u> </u>	STAND HOLES		A		<u>G</u>	Α	<u>B</u>	<u>P</u>	<u>A</u>	<u> </u>	
3	955 110 -0 751 - (0-55 100 - 01)		A	B	G	A .	<u>B</u>	P	<u> </u>	 	
	SET UP TO BOLT (CODE 1005.01)	1	A	B B	G G	A A	B B	<u>Р</u> Р	A	 	
4	POSITION BOLT (CODE 1005.03)		 	В	G	A	В			 	
	POSITION 150E1 (CODE 1003:00)		A	В В	G	A	В	<u>Р</u>	A A		
5	PLACE ALLEN WRENCH,	<u> </u>	Â	В	G	A	В	P	A		
- <u>-</u> -	TEACE ACEN WEENCH,		A	 B	G	A	В	P	A		
	TIGHTEN SCREW		А	В	G	Α	В	P	A	 	
			А	В	G	A	В	Р	A		
6	CHECK FOR Y8" VERT. GAP		A	В	G	Α	В	P	A		
	_		A	В	G	Α	В	P	A		
7	GET & ASIDE PLIERS		А	В	G	Α	В	P	Α		
		1	A 6	Bo	G	M	× o	10	Ao	8	640
8	GET & CUT WIRE	2	A/	Вб	G I	MI	×ο	116	Ao	8	1520
			A	В	G	M	×	1	Α	<u> </u>	
9	PLACE WIRE THEU SCREWHEADS		A	В	G	M	X	1	Α	<u> </u>	
	A common de de common de la common de la common de la common de la common de la common de la common de la comm		A	B	G	M	X	<u> </u>	A		
10	GATHER ENDS & TWIST		A		<u>G</u>	M	×	1	<u> </u>		
11	ON NE I MEDE		A	B	G	M M	×	<u> </u>	A A	<u> </u>	
	PAINT LINERS		l							610	50,320
			1 00 J	^-/-	0.3	15	<u> 27/</u>	0.1	<u> </u>	(4) 0	
		8	A B G							(B) (4)4	
		10	A D B O G							16	1280
		10		A B		414		O C		10	1200
				A B				P			
			A B G	A B	P			Р			
			A B G	АВ	P		AE	Р	A		
			A B G	A B	P		A B	P	Ā		
			ABG	A B	Р		A B	Р	A		
			ABG				АВ	Р	A		
			A B G					Р			
			A B G					Р			
			A B G	A B	Р		A B	Р			
		3							360		860
		4						4	10	32	13,120
						·					
			L	-						L	
TIME	-									74,	020

MOST - calculation

3003.01

27,467

DATE 4/27/84 SIGN. TLC

CHILL WATER PUMP INSTALLATION

PAGE 10-105

DITIONS PREPARATION				_						
MODULE AREA					-					
. METHOD	NO.	SEQUE	NCE N	IODE	_				FR	TM
SIMPLE INITIAL		A	В	G	A	В	₽	Α		
JOB PREPARATION		Α	В	G	Α	В	Р	Α		
(6 005 1001 11)		A	В	G	_A	В	Р	Α		
(COOE 1001.11)		A	В	G	Α	В	P	Α		
OBTAIN BOLTS FROM		A	В	G	Α	В	P	Α		
UDININ BULLS FROM		A	В	G	Α	В	Р	Α	<u> </u>	<u> </u>
EREE STOCK		A	8	G	<u> </u>	В	Р	Α		
FREE STOCK		A	В	G	A	В	Р	A	ļ	
(CODE 1001.121)		A	В	G	Α_	В	Р	A		
(CODE 1001.121)		A	В	G	<u> </u>	В	Р	Α	<u> </u>	ļ
		A	В	G	Α	В	Р	Α	L	ļ
		A	В	G	Α	<u>B</u>	P	_A		ļ
		A	8	G	_ <u>A</u>	В	P	A		ļ
		A	В	G	<u>A</u>	_ <u>B</u>		<u> </u>		
		A	8	G	<u> </u>	<u>B</u>	<u>P</u>	<u> </u>		
		A		<u>G</u>	<u>A</u>	<u>B</u>	P	_ <u>A</u>		
		A	B	G	<u> </u>	В	Р	_ <u>A</u>	ļ	<u> </u>
		A	<u>B</u>	G G	A M	B	P	A	-	-
		A	В			<u> </u>				
		A .	<u>B</u>	G	M	<u> </u>	- 	_ <u>A</u> _		
		A	В	G G	M	×	1	_ <u>A</u>		_
		A	<u>B</u>	G	M	$\frac{\hat{x}}{x}$	<u> </u>	_ <u>A</u>		
	-	A	В	G	M	<u> </u>	1	A		_
		A		G	M	$\frac{x}{x}$	1	A		
	-	A	В	G	M	×	1	A		
		АВС	A			A	ВР	A		
	<u> </u>	АВС	: A	ВР		A	8 P	A		<u> </u>
		 	A 6	ВР			ВР	A		\vdash
		АВО	. A	ВР		Α	ВР	Α		
		АВС					ВР			
		АВС					ВР			
		А В С		_			вР			
		АВС	A	вР		Α	ВР	Α		
•		АВС	A	ВР		А	ВР	A		
		A B G					ВР			
		A B G	A	ВР			ВР			
		АВС	A	ВР	•		8 P			
		A В С				A	ВР	Α		
		A B G	Α	ВР		A	ВР	Α		
							120	50		12,0
	2							417		15,

TIME =

MOST - calculation

CODE

3003.02

DATE 4/27/84

SIGN. TLC

									0-1	06	
ACTIV	TY AREA TRAVEL										
CONDI	MODULE AREA										
NO.	METHOD	NO.	SEQUEN	ICE I	MODE	L				FR	TMU
1	74		A	В	G	Α	В	Р	Α		
_	FROM: TOOL BOX		A	В	G	Α_	В	Р	<u>A</u>	<u> </u>	ļ
	TO: FREE STOCK	 	A	<u>B</u>	G	A		P	<u>A</u>	 	
	10, PREE STOCK		A	B	G	A A		P P	A	 	
	& RETURN (CODE 1002.17)		A -	B		A	В	<u>.</u> Р	A .		
0			A	В	G	Α	В	Р	A		
2	FROM: TOOL BOX		Α	В	G	Α	В	P	Α		
	A		А	В	G	Α	B	Р	Α		
	TO: MODULE 2 STAIRS		A	В	G	Α	В	Р	Α		
	dOFTHEN (000= 1000 12)		Α_	В	G	A	В	Р	A	<u> </u>	ļ
	& RETURN (COPE 1002.12)	<u> </u>	Α_	В	G	<u>A</u>	В	P	_A_		
3	FROM: MODULE 2 STAIRS		A .	8	G G	<u>A</u> _	_ <u>B</u> _	P P	_ <u>A</u> _	 	
<u> </u>	THORY, HUUGEB Z SINIKS		A	8 B	G	A A	B	P P	A A		
	TO; AMR NO, 1		A	В	G		В	P	A A		
	•		A	8	G		В	P	- A		<u> </u>
	* RETURN (COPE 1002.18)		A	В	G	A	В	P	A		
			A	В	G	М	X	1	Α		
			А	В	G	М	х	1	Α		
			A	В	G	М	Х	I	A		
			A	В	G	М	×	1	A		
		<u> </u>	A	В	G	M	×	<u> </u>	<u>A</u>	<u> </u>	
			A	<u>B</u>	<u> </u>	M	<u> </u>		_ <u>A</u>		
			A	B	G	M	_ <u>x</u>	1	A	 	
			A B G		ВР	141	$\frac{\lambda}{A}$		A		
			A B G		ВР		A			 	
			A B G					B P			
			A B G	A	ВР		A	ВР	A		
			A B G	Α	ВР			ВР			
			A B G					ВР			
			A B G					ВР			
			A B G					ВР			
l			A B G					B P	_		
			A B G					B P		 	
			A B G			-		B P		 	<u></u>
			A B G					ВР			
	•		A B G					ВР			
		l							960	2.	3920
		2							300	2	6600
		3_						2.	270	Z	4540
		L	<u> </u>								Ĺ
TIME	R-1458									15	060

FORM R-1458

MOST - calculation

3003.03

DATE 4/27/84

PAGE 10-107

CHILL WATER PUMP INSTALLATION

CONDITIONS A A STATE OF TEMPORARY MOUNTS

COND	MODULE AREA	•	.,		. -						
NO.	METHOD	NO.	SEQUEN	CE M	ODE	<u>. </u>				FR	TMU
1	0,0000		A	В	G	A	В	Р	Α	<u> </u>	0
•	RIGGERS LAND CHILL WATER		A	В	G	A	В	Р	A	ļ	
	PUMA AND FOUNDATION ASCENT	8	A	_86		A 1	Bø		A3	4	52
	PUMP AND FOUNDATION ASSEM-	7	A 3	BG		A 3) _{Во} В	P _O	A 3	(4)	240
	BLY ON LOCATION		A		G	A	<u>в</u> В		A A		
	I TO LO CONTINUE		Ā		G		В	P	_ <u>^</u> _		
2	NOT USED		А	В	G	Α	В	P	A		
			А	В	G	A	В	Р	Α		
_			Α	В	G	Α	В	Р	Α		
2	557 7		А	В	G	Α	В	Р	Α		
<u>3</u>	SET-4P TO REMINE TEMPORARY		A	В	G	Α	В	Р	Α		
	POIT ((and look and)		A	В	G	<u>A</u>	8	P	Α		
	BOLTS (CODE 1005.02)		A	8	G	<u> </u>	<u>B</u>	P _	<u>A</u>		
4	LOOSEN BOLT-4@34"		A	В	G	<u>A</u>	В	P_	_ <u>A</u>		
			A	В	G G	A	<u>B</u>	<u>Р</u> Р	A		
	(CODE 1005,04)		A	В	G		8	P	A		
			A	В	G	M	×	1	A		
5	REMOVE BOLT (CODE 1005.03)		А	В	G	М	х	1	A		
,	1 - 1 - 1 - 1 - 1 - 1		А	В	G	М	Х	ı	Α		
6	LOOSEN BOLT-8@5/8"		A	В	G	М	х	1	A		
	(CODE 1005.04)		A	B	G G	M	×	+	A		
7	REMOVE BOLT (CODE 1005.03)		A	B	G G	M	X	1	A		
	1101000 1000 10000 10000		A B G		ВР				$\frac{7}{A}$		
8	REMOVE TEMPORARY MOUNTS		A B G	A	ВР		A	ВР	A		
	TRAVEL		ABG	A	ВР	-			A		
9	INAVEC		A B G	A	ВР		Α		A		
			A B G	Α	ВР		Α	ВР	Α		
			A B G	Α	в Р			ВР			
			A B G				_	ВР			
			ABG					ВР			,
			A B G	_				ВР			
			ABG					B P			
			A B G					3 P			
			A B G					3 P B P			
-		3	- 3 3		<u> </u>				970		970
		4							838	4	33.5
		5							410	4	1,640
		6							708	8	5.664
		7			-				410		3,28
TIME	=										666
									- 1	12,	500

MOST - calculation

3003.04

DATE 4/27/84

SIGN. PAGE 10-108

CHILL WATER PUMP I NSTALL ATION

I I	NSTALL	PERMANENT	MOUNTS
CONDITIONS	10DULE	AREA	

	MODULE AKEA										
NO.	METHOD	NO.	SEQUEN	CEN	10DE					FR	TŅU
	0.000	1	А	В	G	Α	В	Р	Α		0
1	RIGGERS REMOVE PUMP	2	A	В	G	Α	В	Р	Α	<u> </u>	0
	FROM FOUNDATION	3_	A	B	G	<u>A</u>	В	P		 	0
 		5	A		G			P,		14	520
2	PRODUCTION WELPER WELDS	8	^3			_	, -	Po		(4)	240
<u> </u>			A	B 	G G	A	<u>B</u> 	P P	A	 	
	COMPLETE FOUNDATION		A	8	G	A	В	P	A		
3	PAINTER PAINTS FOUNDATION	-	A	B B	G G	A	В	P P	A	-	
			A	В	G	A	<u>B</u> _	P	_ <u>A</u>	 	
4	SET-UP FOR BOLTING		A	В	G	A	В	P	A	 	
	_		А	В	G	A	В	Р	A		
 	(CODE 1005.02)		А	В	G	Α	В	Р	Α		
5	PLACE RECUERT	 	A	В	G	Α	В	<u>P</u>	Α		
	PLACE RESILENT MOUNTIN	 	A A	B	G	Α	В	P	_A_	 	
1	POSITION	 -	A		G	A	B	P	_ <u>A</u>		ļ
		 	A	8	G G	M	X	1	A	1	
6	POSITION BOLT-5/8".		Α	В	G	М	x	Ì	A		
	(0,05,100 = -3)		А	В	G	М	x	ī	Α		
	(CODE 1005.03)	 	A	B	G	M	×	1	_ <u>A</u>		
7	POSITION BOLT-3/41		A	В	G G	M	x	1	A		
-	(CODE 1005.03)		A	B	G	M	×	1	A		ļ
8	TRAVEL		A B G	A	ВР		Α		Α		
			A B G		ВР				A		
	l l	 	ABG		B P		_ <u>A</u>				
		 	A B G		B P			B P	A	 	
	,	 	A B G		B P		A A		A A	 	
			A B G					ВР			
			A B G				_A	ВР	Α		
			A B G					в Р			
			A B G					ВР			ļ
Ì			ABG					B P		 	<u> </u>
			A B G					B P		 	
		¥			<u>- r</u>				970		970
		6							410	8	3,280
		7				_			410	4	1,640
											
	L		L						,	<u> </u>	<u> </u>
TIME	**************************************	- حاري								6,	650
FORM	LB-1458										

MOST - calculation

CODE 3003.05

	CHILL WATER PUMP I	NS7	AL	LA	710	N		PAGE	10	-10	79	
ACTIV	INSTALL SELF LOCKIN	, ,		LC -7	74 /.	<i>CD</i>	_					
OND							<u>. </u>				-	
	SUB-ASSEMBLY AND M	<u> 204</u>	LE	: <u>A</u>	RE	A					-,	
NO.	METHOD	+	SE	QUEN							FR	TML
1	RICE DIACE INCE	5	 			G d				A ₃	(4)	24
	RIGGER PLACE UNIT ON	1	+	A	В	G	A	8	P	A	╂	┼──'
	LONDYLION	-		_ <u>_</u>	В	G	<u> </u>	В	P		 	
2	050-15-11 0-15		1	A	В	G	A	В	P	A	 	
_	REPOSITION BOLTS			Α	8	G	Α	В	Р	Α		
	(CODE 1005.03)		 	Α	8	G	A	В	Р	Α	<u> </u>	<u> </u>
	C C C C C C C C C C C C C C C C C C C		┼		8	G	<u> </u>	<u>B</u>	P	A	-	
3	INSTALL SELF LOCKING	 	╁	<u> </u>	В	G	A	8	P P	A		
		 	1	_ <u>A</u>	В	G	A	В	<u>г</u>	A A	+	
	NUTS 5/8" (CODE 1005.05)	 	1	A	В	G	A	В	P	A	 	1
1.1	THE TALL SOCIETY 3"/			Α	В	G	Α	В	Р	Α		
4	INSTALL SELF LKG. NUTS 34"(CODE 1005.05)		_	Α	8	G	Α	В	Р	Α		
5	MANE RETURNED	ļ	_	Α	В	G	Α	В	Р	A	<u> </u>	↓
	MOVE BETWEEN BOLTING	·	├-	<u>A</u>	<u>B</u>	G	<u>A</u>	<u>B</u>	P	<u> </u>	 	
	LOCATIONS		-	A_	<u>B</u>	G	A	B	P P	A	 	
				<u>A</u>	В	G	M	B X		Ā	-	├──
				A	В	G	М	×	1	A		
				Α	В	G	М	x	ı	Α		
			L	Α	В	G	М	×	1	A		
		ļ	<u> </u>	A	В	G	M	X	1	A	<u> </u>	
			-	A	<u>B</u>	G	M	<u> </u>	1	<u> </u>	-	
			-	A A		G	M	×	<u> </u>	A	 	
			A	ВG		ВР				A	 	
			A	ВG	A	ВР	·	A	ВР	A	1	
			A	ВG	Α	ВР		A	ВР	Α		
			Α	ВG	A	ВР		A E	3 P	A		
				B G					ВР			<u> </u>
		<u> </u>		B G					3 P			
				B G					B P		 	
			! 	B G					3 P		 	
				B G					3 P		<u> </u>	-
				B G					3 P			
			-	B G					P			
			•	B G					3 P			<u> </u>
			A	ВG	A			A E	3 P			Ц0-
		3	-			•				110	12	492
		4	-							<u> 26</u> 15	4	820,
											-/-	1,42
TIME	=		<u> </u>								18	,228

FORM R-1458

MOST - calculation

CODE 3004.01

DATE 4/19/84 SIGN. TLC

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION PAGE 10-110

ACTIVITY JOB PREPARATION

CONDITIONS	٨٨	Λ	\bigcap	11	_	ADEA
	IVI	U	ハ	/ _	<u>_</u>	AVEN

	MODULE AREA										
NO.	METHOD	NO.	SEQUI	ENCE	MOD	EL				FR	TMU
	C. 11.01 = T. 0		A		G	A	В	P	A		
1	SIMPLE JOB PREPARATION	<u> </u>	A				В	Р	Α	<u> </u>	ļ
	(CODE 1001.11)	-	A				<u>B</u>	<u>P</u>	A	 	 -
		┼	A				<u>B</u> _	P	A		
2	OBTAIN TOOLS FROM TOOL CRIB	-	A					P		-	
	1		A				В	P	Α		
	FREE STOCK		A	Ε			В	Р	Α		
	(CODE 1001.121)	<u> </u>	A				В	<u> </u>	<u> </u>	ļ	ļ
<u> </u>			A				<u>B</u> _	P P	A 	 	
3	RETURN TOOLS TO TOOL	-	A				B	P	A		
			A			Α	В	P	Α		
	CRIB (SAME AS NO. Z)		А	Ε	G	Α	В	Р	Α		
			A				В	Р	Å	ļ	
 		 	A				В	P	<u>A</u>	-	
		-	A			<u>A</u>	B B	<u>Р</u> Р	A	-	
		一·	A			M	×	ı	A		
			А	E	G	М	х	ı	А		
			А	E	G	M	X	ı	A		
		 	A	_		M M	<u></u>	<u> </u>	A		
-		-	A				$\frac{\lambda}{x}$	$\dot{}$		-	
 			A			M	$\frac{\hat{x}}{x}$	1	Α	-	
			А	Ε	G G	М	x	ī	Α		
			А В	G A	В	P	A	В	PA		
<u></u>		 		G /					PA	<u> </u>	
		-	A B	G			<u>A</u>		P A		
<u> </u>		+	 	G A				B I	P A	-	
	·		A B						PA		
			А В					В			
-		 	АВ					В			
		-	A B					В		 	
		+	A B					B I		 	
1			АВ	-				В		 	
			А В	G A	\ B	P		В			
		<u> </u>	АВ	G A	В	Р	A	8 1			ļ
		1							2050	-	12,050
-		2	 			·			5,417	2	30,834
		3	 						5,417		15,417
TIME		.l	.							58	301

MOST - calculation

CODE

3004.02

60,304

DATE 4/19/84

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HIGH PRESSURE AIR DEHYDRATOR INSTALLATION PAGE

PAGE 10-111

-						1		<u>0 - 7</u>	//	
ACTI	AKEA IKAVEL									
COND	MODULE AREA									,
NO.	METHOD	NO.	SEQUEN	CE MOD	EL				FR	TMU
1		1	A	В		В	Р	A	 ```	
	FROM: TOOL BOX		А	ВС	A	В	Р	A		
	TO: WET DOCK TOOL ROOM	<u> </u>	A	В		В	P	Α		
-			A	B 0			P	A	+	
	\$ RETURN (CODE 1002.16)	-	A	B 0			_ <u>-</u>	<u>A</u>	+	-
2	F0-111 0		A	8 6		В	Р	A	 	
2	FROM: TOOL BOX		A	В С	А	В	Р	Α		
	TO: FREE STOCK	<u> </u>	A	B 0		B	<u>Р</u>	A	ļ	
		-	A	B G		<u>B</u>	P P	<u>A</u> A	 	
	& RETURN (CODE 1002.17)		A	B G		В	P	A		
3	FROM: TOOL BOX		A	B G	А	В	Р	Α		
<u> </u>	7,7017, 1002 2070	-	A .	8 G		В	P	<u>A</u>	-	ļ
	TO : MODULE 2 STAIRS	-	A	B G			P P	_ <u>A</u>	+	
	+ n = =	†	A	B G	-	В	P	_ <u>^</u> _		
	& RETURN (CODE 1002.12)		А	B G	Α	В	Р	Α		
4	FROM: MODULE 2 STAIRS	-	A	B G		<u> </u>	1	_ <u>A</u>	ļ	
<u> </u>		 	A	B G		<u>x</u>	1	A	 	-
	To : AMR NO. 1		Α	B G	М	х	1	A		
	\$ RETURN (CODE 1002.18)	<u></u>	A	B G		<u> </u>	_!_	<u>A</u>	-	
		-	A	B G		×	1	A A	 	ļ <u>.</u>
5	RETURN TOOLS TO TOOL-		А	B G		×	1	Ā	 	
	BOOM III WIST DOOR OLDS		A 8 G	АВ	P	Α	ВР	Α		
	ROOM IN WET DOCK BLDG.	ļ	ABG		P	A		<u> </u>	 	
	FRETURN TOOL TOOL BOX	-	A B G	A B		<u>Α</u>	B P	A		ļ
	(A B G				B P		†	-
	(CODE 1002.16)		A B G				ВР			
		<u> </u>	A B G				ВР		 	
		 	A B G				B P			
			A B G				B P			
			A B G	АВ	•	A	В Р	Α		
		ļ	A B G				3 P			
		 	A B G	AB		1/3	В Р 11	<u> </u>	2	22.622
		2				196			2	392
		3				330	0		2	6600
		4				227			2	4540
		5	L			<u> 11377</u>			2	22 62

TIME =

MOST - calculation

3004,03
DATE 4/14/84
SIGN. T. C

Sinh	building						SIGN	1. T	40		
	HIGH PRESSURE AIR DEH	IYDRI	ATOR I	TVS.	TALL	ATM	PAG	E / (0-11	2	
ACTIV	TY PREPARATION FOR BUR	NING	PA	DS	•						
COND	MODULE AREA										
NO.	METHOD	NO.	SEQUEN	ICE N	ODE	 L				FR	TMU
			А	В	G	Α	В	Р	A		
	MEASURE LAYOUT LINES		Α	В	G	Α	В	Р	Α		
2	DRAW LAYOUT LINES		A	В	G G	A	B	P P	A A		
			A	В	G			P	_	-	
3	PUNCH HOLES		А	В	G	Α	В	P	Α		
		<u></u>	Α	8	G	A	В	Р	A		
			A		G	A	B B	P	_ <u>A</u>		
[A	 B		<u>A</u>	B	- <u>-</u>	- A		
 			A	В	G	_ _A	В	P	A		
			А	В	G	Α	В	P	A		
		<u> </u>	Α	<u>B</u>	G	<u>A</u>	В	P	Α	 	
 -		-	A		G G	A A	8 B	P P	A		
		 	A	В	G		В	P	A A		
			A	В	G	Α	В	P	A		
			А	В	G	Α	В	Р	А		
l I			Α	В	G	M	<u> </u>	1	A		
 			<u>А</u>	B	G G	M M	×		A		·
			A	В	G	M	×	.	Ā		
			Α	В	G	М	×	1	Α		
			Α	В	G	М	<u> </u>	1	A		
		-	A	B	G	M	X	1	A A		
		1	A / B _O G							(12)	4.140
		2	A,BG	3 Ap	B _O (P)	A R	2/// 2)A,	B oP	An	(12)	440
		_3	AIBOG	3 ^A 6	B ₀ (P,	A, F	3)A	BoP	Ao	(20)	660 1,060
			A B G	Α_	B P		A	B P	Α		
	,		A B G			_		B P			
			A B G					B P			
			A B G					ВР			
			A B G					вР			
		ļ	ABG					ВР			
		-	A B G					B P			
			A B G					ВР			
			A B G					ВР			
 											
						··					
TIME	=									5,8	60
	4 D 1459										

MOST - calculation

3004.04 DATE 4/19/84

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION PAGE 10-1/3

SIGN. TLC

ACTIVITY

BURNING PADS

CONDITIONS	MODULE	AREA
	IVIUUVLE	AKEA

	MUDULE AREA				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TA
1.	C T		A32 B6 G3 A32 B0 P6 A3	2	1110
	GET TORCH LINES, REPLACE	3	A BO G A BO PS A	5	3,70
2	Courses d'Avenousees luige	4	A BO GS A BOPLAO		3,70
1	CONNECT & DISCONNECT LINES	6	A, Bo G, A, Bo PS Ao		60
3	PLACE GLOVES, REMOVE GLOVES & GOGGE	112	A B G A B P A A O		2 5
	_		A B G A B P A	+	
4	PLACE GOGGLES		A B G A B P A	 	
_			ABGABPA		
3	OPEN & CLOSE VALVES		A B G A B P A		
6	GET PRETURN STRIKER		A B G A B P A	├	<u> </u>
	GETT RETURN STRIKEN		A B G A B P A A B G A B P A		-
7	LIGHT TORCH		A B G A B P A		
			A B G A B P A		
8	ADJUST FLAME		A B G A B P A		
9	LOWER GOGGLES		A B G A B P A	ļ	
	LOWER GOGGES	5	A B G A B P A (A ₁ B ₀ G ₁ M ₁) X ₀ I ₀ A ₀	1012	
10	RAISE GOGGLES	7	A B G M X D I D A	6/2	20
		3	A, 80 G, M, X0 10 A0		3.5
	POSITION TORCH	9	A BOG M XO L AO		4 3
12	10.25 72.001	10	A B G G M X O 10 Ao		·3C
1	ASIDE TORCH	13	A B G M X I A	12	6430
13	Burn		A B G M X I A		-
		2	10 80 GO AO 80 (P. A. F54) 1 80 P. A.	(2)2	230Q
			ABGAB.P ARPA		
	ļ		A B G A B P A B P A		
			A B C A B P A B P A		
	}		A B G A B P A B P A A B G A B P A B P A		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA	,	
			A B G A B P. A B P A		
	<u> </u>		A B G A B P A B P A		
 			ABGABP ABPA		 , -
			ABGABP ABPA		
			SUBTOTAL ELEMENTS 2-12		30: 3
			ITEM NO.1		1110
		[ITEM No.13		6480
TIME :	,			10,	660
	D 1459				

MOST - calculation

CODE

3004.05

DATE

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	HIGH PRESSURE AIR DEHYDRI	TOR	INSTALLATION PAGE 10-114	
ACTIV				
CONDI				
NO.	METHOD METHOD	NO.	SEQUENCE MODEL FR TMI	
		3		50
1	PLACE CHOCKS IN WATER	5	A, Bo G2 A, Bo P2 A0 4 37	20
2	WAIT UNTIL IT COOLS	<u> </u>	A B G A B P A A B G A B P A	
3	GET CHOCKS		A B G A B P A	_
4	TURN ON GRINDER		A B G A B P A	
5	PLACE PART TO GRINDER		A B G A B P A	
	<u> </u>		A B G A B P A A B G A B P A	
6	TURN GRINDER OFF		A B G A B P A	
		-	A B G A B P A	
		 	A B G A B P A	
			A B G A B P A	
			A B G A B P A	
			A B G A B P A	
j		2	A B B G M X 178 B A 177 A 24 (6.95) 23,4 A B B G M X X B B A 24 (6.95) 23,4	<u> 30</u>
		4	A24 B0 G1 M0 (X330)10 A24 (6.953) Z34	50
		6	A B G M X I A	<u>30</u>
		 	A B G M X I A	
			A B G M X I A	
			A B G M X I A	
			A B G M X I A	_
			A, B, G, A, B, P, C, A, B, P, B, P, A, B, P,	80
		 	A B G A B P A B P A	
		<u> </u>	A B G A B P A B P A B G A B P A B P A	
		-	ABGABP ABPA	
	·.		ABGABP ABPA	
			ABGABP ABPA	
		ļ	A B G A B P A B P A	
			ABGABP ABPA	
			A B G A B P A B P A B G A B P A	
		-	ABGABP ABPA	
			ABGABP ABPA	
			ABGABP ABPA	
		ļ		
		-		
TIME -	•	I	2000	
	R_1458		25,860	

MOST - calculation

3004.06 DATE 4/19/84

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION

PAGE 10-115

16,130

107	UTV	تحلعت		1707				<u> </u>	
ACTIV	DRILL PADS								'
COND	MODULE AREA								
110	METHOD	NO.	SEQUENCE MO	DE!	-			50	
NO.	METHOD	NO.	 	G A	A В	P	A	FR	<u> </u>
]	ALIGN RULE	H	 	G A		<u>.</u> Р		 	
		 			A B	P			604
Z	DRAW DIAGONAL LINES		+	G A	-	P	A	 	
3			A B	G A	A B	Р	A		
<u> </u>	CENTER PUNCH HOLES		A B	G A	В	Р	Α		
4	PUT CHOCK IN JIG		A B	G /	В	Р	Α		
7	TOT CHUCK IN JIG				A B		_ <u>A</u>		<u> </u>
5	CHANGE DRILL BIT	<u> </u>		G A		P	_ <u>A</u>	ļ	<u> </u>
)		 			A B	P	_ <u>A</u>		
	(CODE 1004.14)	-	 	G A		P P	A		
1		 			В	P	A		
6	HAND FEED DRILL TO AND FROM		 		В	Р	A		
			A B	G A	В	Р	A		
	WORKPIECE (CODE 1004.15)		A B	G A	В	Р	Α		
7	00		д В	G A		P	Α		
1	PROCESS TIME FOR DRILL	ļ.,		G /		<u>Р</u>	A	/ 2 1	
	1/8" PILOT HOLE. (MAT' AND COND.		1			(13	<u> A)</u>	(8)	3
	<u> </u>			G N		1	A		
	CODE 0013 @ 1/4" DEPTH.)			G N		ī	A		— ·
_			 	G N		I	A		
8	PROCESS TIME FOR DRILL		A B	G M	X	ı	A		
				G N		1	Α		
	25/32 HOLE (MAT'L AND COND.			G N		_!_	A	-	
		2	A 1 BOG3 A B	````	K3 A		A _O	(8)	44
	CODE COIS @ 1/4" DEPTH)	3	 	₹ <u>G ¥</u> ř	F6) A1	B _p P _j		(4)	
		 	A B G A B	<u> </u>	24	<u>ъъ</u> В Р	A _O	8	4,90
			ABGAB			ВР			
	į		ABGAB			ВР			
			ABGAB			вР			
			ABGAB	P	Α	ВР	Α		
	•		ABGAB	_		ВР			
			ABGAB			ВР			
			ABGAB			B P		ļ	
			ABGAB			B P	_		
			ABGAB			B P			
		5		<u></u>			400	2	4,
		6					530	8	424
		7					65	4	
		8					165	4	240
					-				

TIME =

MOST - calculation

3004.07 DATE 4/19/84

SIGN. TLC

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HIGH PRESSURE AIR DEHYDRATOR INSTALLATION

ACTIV	LAYOUT FOR DRILLING OF	F	DUNDATION
OND	MODULE AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
1	0 0 . 4 . 6 . 7 . 4 . 7 . 7 . 7 . 7 . 7 . 7		A B G A B P A
<u> </u>	RIGGER LAND EQUIPT ON FON	6	A B G A B P A
2	MEASURE HOLE LOCATIONS		A B G A B P A
	TIEROURE HOLE LOCA TIONS		A B G A B P A
3	MAKE HOLE LOCATION MARKS		A B G A B P A
4			A B G A B P A
	ALIGN FON TO MARKS		A B G A B P A
5	SCRIBE HOLES		A B G A B P A
	JENTINE HILLES		A B G A B P A A B G A B P A
6	RIGGER REMOVE EQUIPT, PROM FOR		A B G A B P A
			A B G A B P A
7	LOCATE CENTER OF HOLE	-	A B G A B P A
8	CENTER PUNCH HOLES		A B G A B P A A B G A B P A
			A B G A B P A
			A B G A B P A
		4	A, Bo G3 M3 X5 1, A1 2 180
			A B G M X I A
			A B G M X I A
			A B G M X I A A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A
		2	A 1 B G A 1 B (P, A 3 M) A 1 B P, AD (4) 1630
		<u>3</u>	A, BoG3 ADBOP, A3 R3) A 1BOP, AO (4) 340 A, BC G3 A, BCP3 A3 R3 A, BOP, AO (4) 550
	, in the second	7	A, B, G, A, B, P, A, K, Y, A, B, P, A, (4) 550 A, B, G, A, B, P, A, T, A, B, P, A, (4) 40
		8	A, B, G, A, B, (7 A, F,) A, B, P, A, (4) 600
_			A B G A B P A B P A
		ļ	A B G A B P A B P A
			A B G A B P A B P A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
-			A B G A B P A B P A
			
TIME	=		3,340

FORM R-1458

MOST - calculation

3004.08

DATE 4/19/84

SIGN. TLC

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION F

PAGE 10-117

ACTIV	DRILL FOUNDATION											
COND	MODULE AREA								··· · · · · · · · · · · · · · · · · ·	-	<u> </u>	
NO.	метнор	NO.	SEQ	UEN	ICE N	MODE	L				FR	TI ;
ī	PACITICAL DON 1 /2-00	7				5 G		() B c	Po	A.3	(4)	24
1	POSITION DRILL (CODE			Α	В	G	Α	В	Р	A		
	1004.11)			A	В	G	Α	В	Р	A		
-	100 111 3	+	┼	<u>A</u>	В	G	<u>A</u>	В	P	<u>A</u>		
2	PLUG IN EXTENSION CORD	-	 	<u>Α</u>	В	G		<u>B</u>	P 	A	 	
_		+	+-	A A		G G	A	<u>B</u>	P	A	┼	
	(CODE 1004.13)		+	A	В	G	A	8	P	A	+	
3	14114 10 - 00 0 -		<u> </u>	A	В	G	A	В	Р	Α	<u> </u>	- -
٥	CHANGE PRILL BIT			Α	В	G	Α	В	Р	Α		
	(CODE 1004.14)		+-	Α	В	G	Α	В	Р	Α	T	
	((0)0 10 - 1911)	 	+	<u>A</u>	В	G	<u>A</u>	В	P	Α		
4	HAND FEED DRILL BIT TO AND	-		A	8	G	A ^	В	P	_ <u>A</u>	 	
'	Illina ton allen of the	 	+	A A	8 B	G G	A A		P P	<u>Α</u>	-	-
	FROM WORKPIELE (CODE	-	 	A	B	G	A	<u></u>	P	A	 	- -
		+	 	A	В	G	A	В	P	A		
	1004.15)		+	A	В	G	Α	В	P	A		
5	PROCESS TIME FOR DRILL			A	В	G	М	х	1	Α		
2			 	A	В	G	М	Х	1	Α		
	1/8" HOLE (MAT'L AND COND.	ļ	 	<u>A</u>	<u>B</u>	G	M	X	!	Α	 	
		-		A	B	G	M	<u>x</u>	1	A	 	
	COOS 0013@ 14" DEPTH)		 	$\frac{2}{A}$	В	G	M	^	'	A	-	
_		 	-	A	В	G	M	×	1	A	1	
6	PROCESS TIME FOR DRILL			A	В	G	М	х	1	Ā		
	25/32" HOLE (MAT'L AND COND.		АВ	3 G	Α	ВР		Α	ВР	Α		
	-3/32 HOLE (MAIL AND COND.	<u> </u>	АВ	3 G	Α	ВР			ВР	A		
1	CODE OO 13@ 14" DEPTH)		A B			ВР			ВР			
			 	3 G		ВР			B P			
7	TRAVEL BETWEEN HOLES		A B			B P			B P			
<u> </u>		 	A B					_	B P		-	
			АВ						ВР			
			ΑВ					Α	в Р	A		-
			АВ						ВР			
	,		A B						3 P			
			АВ	G	<u> </u>	ВР		A I	3 P			
	!	2				 -				10	8	5,92 2,5 (
		3	-				_		2,90 2,4		2	<u> </u>
1	,	4							_ <u></u> 53		8	424
		5	 				·····		6	5	4	2 (
		6		-					16:		4	2 3
TIME :												
	0 1450										14	080

MOST - calculation

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	HIGH PRESSURE AIR DEHYDI	RATOR	TNSTALLATION PAGE 10-118	
ACTIV	TACK WELD PADS			
CONDI	MODULE AREA			
NO.	метнор	NO.	SEQUENCE MODEL FR TM	<u>υ_</u>
1	CET HELDING WILL	2.		80
	GET WELDING WHIP	3	A B G A B P A (4)4 17	20
2	INSERT ROD		A B G A B P A	
3	PLACE ROD ON PAD		A B G A B P A A B G A B P A	
4	CLOSE SHIELD		A B G A B P A A B G A B P A	
5	TACK WELD PAD		A B G A B P A	
		-	A B G A B P A A B G A B P A	
6	OPEN SHIELD		A B G A B P A	
7	INSPECT WELD AND ASIDE WHIP	<u> </u>	A B G A B P A A B G A B P A	
		 	A B G A B P A A B G A B P A	
8	RIGGERS PLACE EQUIPTON FON		A B G A B P A	
		<u> </u>	A B G A B P A	
		1	A B G A B P A A B G G M X I A	90
		4		80
		5	(A, B& Go M, X42) 0 A7 (4)4 81	20
	· · · · · · · · · · · · · · · · · · ·	6	A B G M X I A	80
			A B G M X I A	
			A B G M X I A	
		<u> </u>	A B G M X I A	
		7	A B G A B P A B P A	0
		 	A B G A B P A B P A	
			A B G A B P A B P A	
			ABGABP ABPA	
		<u> </u>	ABGABP ABPA	
		<u> </u>	A B G A B P A B P A B G A B P A B P A	
			ABGABP ABPA ABGABP ABPA	
			ABGABP ABPA	
		\vdash	ABGABP ABPA	
			ABGABP ABPA	
			A B G A B P A B P A	
			ABGABP ABPA	
TIME	#	.	11,150	,
<u></u>	D 14ED		11,130	

MOST - calculation

CODE

3004.10 ATE 4/19/84

6,100

SIGN. TLC

	HIGH PRESSURE AIR DEHY	DRA	TOR INSTALLATION PAGE 10-119	
ACTI	MEASURE AND CUT SHIM	57	OCK	
OND	MODULE AREA			
NO.	метнор	NO.	SEQUENCE MODEL FR	TA
,	4	3	A, B, G, A, B, P, A,	12
<u></u>	GET FEELER GAGE	6	A B G A B P A	
Z	HEE AND ACIDE THE TARE	<u> </u>	A B G A B P A	
	USE AND ASIDE FEELER GAGE	 	A B G A B P A	
3	GET SHIM STOCK	├─	A B G A B P A A B G A B P A	
/;			A B G A B P A	
4	MEASURE SHIM STOCK		A B G A B P A	
5	A		A B G A B P A	
<u> </u>	CUT SHIM STOCK		A B G A B P A	
6	RIGGERS REMOVE EQUIPT OFF	 	A B G A B P A	
			A B G A B P A A B G A B P A	
	FOUNDATION	 	A B G A B P A	
			A B G A B P A	
			A B G A B P A	_
			A B G A B P A	
		 	A B G A B P A	
			ABGMXIA	
			A B G M X I A	
			A B G M X I A	
			A B G M X I A	
			A B G M X I A	
			A B G M X 1 A	
			A B G M X I A	<u> </u>
		1	A, Bo G, A, Bo P, A, B, P, B, P, A, B, P, B,	
		2	A B G A B (F A, M24) A B P, A (3) 4	3: 8
			A B G G A B P P A C (12)	<u></u>
		<u> </u>	A B G A B P A B P A	_/3.
			ABGABP ABPA	
			ABGABP ABPA .	
			ABGABP ABPA	
			ABGABP ABPA	
_			ABGABP ABPA ABGABPA	
			A B G A B P A B P A	
			ABGABP ABPA	
			ABGABP ABPA	

TIME =

MOST - calculation

3004,11 DATE 4/19/84

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION PAGE 10-120

BURNING-WASH OUT TACK WELD ON PADS

COND	MODULE AREA		CED ON PAUS		
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
			A 81 B 6 G3 A 81 B 0 6 A 91		2580
	GET TORCH LINES, REPLACE	3	AL BO GLA, BO PS A	5	350
2	A	4	A Ro GS AL BO PLAO		60
2	CONNECT & DISCONNECT LINES	6	A BO G A BO PS AO		60
3	PLACE GLOVES, REMOVE GLOVES & GOGGE	11	A O B O G O A3 B O PS A O	4	240
	TONCE GLOVES, REMOVE GLOVES I GOOGLE.	12	A B G A B P A	┧	20
4	PLACE GOGGLES	 	ABGABPA	-	
	_		A B G A B P A	1	
5	OPEN & CLOSE VALVES		A B G A B P A		
,	0		ABGABPA		
6	GET & RETURN STRIKER		ABGABPA	<u> </u>	
7	LIGHT TORCH	 -	A B G A B P A		
	LIGHT TORCH		A B G A B P A		
8	ADJUST FLAME		A B G A B P A	 	
			A B G A B P A		
9	LOWER GOGGLES		ABGABPA		
		5	(A Bo G M) Xo lo Ap	(2)2	120
10	raise goggles	7	A BA GA MI XO ID AO		20
.,	0-0	8	A BOG, M, XalaAa		30
11	Position Torch	9	A BO G M XO I AO	4_	160
12	ASIDE TORCH	10	Ap Bo Gp Mo X(3/10 A)	4	120 2620
	.2.125 HRS/+4421		A B G M X I A		2020
13	BURN OUT TACK WELD		A B G M X I A		
•		2	Ao 80 Go Ao 80 (P. A. F5#) A 1 80 P. A.	(2)2	2300
			ABGABP ARPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
	1		A B · G A B P A		
			ABGABP ABPA		
			ABGABP ABPA ABGABP ABPA		
					3070
			SUBTOTAL ELEMENTS 2-12 LITEM NO.]		3070
			ITEM NO.13		2620
	1		L. C. (1, Y.) 9		2020
TIME	-			Q I	80
				0,0	,,,,,

MOST - calculation

CODE 3004.12 DATE 4/19/84

SIGN.

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION PAGE 10-121

INSTALL SHIMS AND FILE PAOS CONDITIONS

NOCK LOOSE PADS WITH HAMMER 4	CONDI	MODULE AREA		
NOCK LOSE PADS WITH HAMMER S A, B, G, A, B, E, P, A, D 2 3.4	NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
2 DRAW IN HOLE SIZE ON SHIM 3 KNOCK HOLE IN SHIM WITH PUMB 4 INSTALL SHIMS (ZCOKNERS) 5 PLACE PAD ON TOPOF SHIM 6 TACK WELD PADS 7 A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A B G A B P A A B G A B	1	Funck to a same	4	
A B G A B P A	1	NNUCK LOOSE PADS WITH HANMER		
A B G A B P A	2	DRAW IN HOLE SIZE ON SHIM	7	
4 INSTALL SHIMS (2 CORNERS) A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A B FILE PADS (2 CORNERS) A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G M X I				
## TNS TALL SHIMS (2 CORNERS) A B G A B P A	5	KNOCK HOLE IN SHIM WITH PUMH		A B G A B P A
5 PLACE PAD ON TOP OF SHIM A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G M X I A A B G M B P A B P A A B G A B P A B P A A B	4	TNSTALL SHIMS (ZCOKNERS)		·
6 TACK WELD PADS A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A B FILE PADS (2 CORNERS) A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G M X I A A B G M				
6 TACK WELD PADS A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G M X I A A B	5	PLACE PAD ON TOP OF SHIM		A B G A B P A
7 GETAND PLACE FILE A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G M X I A	1	TACK WELD BADA		ABGABPA
## RETAND PLACE FILE A B G A B P A A B G A B P A	6	TACK WELD PADS		
## FILE PAOS (2 CORNERS) A B G A B P A	7	CET AND DIAGE EUE	ļ	
A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G M X 472 D A 3 492 L 408 A B G M X 1 A A B G M				
A B G A B P A	8	FILE PADS (2 CORNERS)		
A B G A B P A (a 1 2 6 6 M X 2 1 2 A 1 5 5 2 3 3 3 A 1 2 6 6 M X 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1				
8				
A B G M X I A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A A B G M B P A B P A				
A B G M X I A A B G M B P A B P A A B G M B P A B P A		•	8	Ao Bo Go (M3) Xo Io A3 (55)2 3,36
A B G M X I A A B G M B P A B P A A B B A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A			<u> </u>	
A B G M X I A A B G M B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A				
A B G M X I A A B G M X I A I A B G M X I A I A B G M X I A I A B G M X I A I A B G M X I A I A B G M X I A I A B G M X I A I A B G M X I A I A B G M X I A I A B G M X I A I A B G M X I A I A B G G M X I A I A B G G M X I A I A B G G M X I A I A B G G M X I A I A B G A B P A B P A A A B G A B P A B P A				
A B G M X I A A B G M X I A A B G G A B B C A B C A A B C A A B C A B C A A B C A B C A A B C A B C A A B C				
2 A, B, G, A, B, G, A, B, P, A, C) 2/ 2/ 3 3 A, B, G, A, B, G, A, C, A, B, P, A, C) 27 C A B G A B P A B P A			 	
2 A, B, G, A, B, G, A, B, P, A, Q, Q, Z, Q, Q, Q, Q, Q, Q, Q, Q, Q, Q, Q, Q, Q,			1	A, B, G, A, B, P, A, L, A, B, P, A, - (2) 270
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A			2	A, B, G, A, B, (B, A, R) A, B, P, A, (2) 2/0
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A			3_	A, Bo G, A, B, (P3 A, L6) A, B, P, A (2) 270
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A				
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A				<u> </u>
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A				<u> </u>
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A				<u> </u>
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A				
A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A				
A B G A B P A B P A B P A B G A B P A B G A B P				
A B G A B P A B P A				A B G A B P A B P A
				<u> </u>
				A B G A B P A B P A
	_			
TIME = 19070	TIME	=	L	9,070

MOST - calculation

3004.13

DATE 4/19/84 SIGN. TLC

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION PAGE 10-122

ACTIVITY INSTALL AND REMOVE TEMPORARY FASTNERS

COND	MODULE AREA										
NO.	METHOD	NO.	SEQUEN	CE M	ODE					FR	TMU
			A	В	G	A	8	P	Α		0
	RIGGER PLACE EQUIPT. ON FON.	9	Α	В	G	A	В	Р	Α		0
2	CTT US COS ON T WO (S. S.	10	A3	ВС) B 0		<u>^A3</u>	(4)_	240
	SET-UP FOR BOLT-UP (CODE		Α .	8	G	_ <u>A</u>	<u>B</u>	P	<u> </u>		
	(1005.02)	 -	A .	B	G	A		P	<u> </u>		
	(1000.0 -)		A	8	G G	A	B B	P P	A		
3	POSITION BOLT (CODE	 -	A	В	G	A	В	P	A		
			А	В	G	Α	В	Р	Α		
	1005.03)		Α	В	G	Α	В	P	Α		
	=		Α	В	G	Α	В	Р	A		
4	TURN BOLT (CODE		Α	В	G	Α	В	Р	Α		
	1005.04) - 3/4 BOLT	<u> </u>	A	В	G	A	В	P	Α	-	
	1003.077 14 800.		A	<u>B</u>	G	<u>A</u>	<u>B</u>	<u> </u>	<u> </u>	-	<u> </u>
5	GET FEELER GAGES		A	В	G G	<u>A</u>		P P	A A	 	ļi
			A	B B	G	<u>A</u>	В	P	A		
6	USE AND ASIDE GAGES		A	В	G	_ <u>_</u>	В	P	- ^		
			A	В	G	М	×	1	A		
7	UNBOLT - TURN BOLT (CODE		A	В	G	м	х	1	A		
			А	В	G	М	х	1	Α		
	1005.04) - 3/4" BOLT		Α_	В	G	M	X	ı	A		
0	PENINT PRIT (COSTONE 03)		A	В	G	M	<u>×</u>	<u>.</u>	A	<u> </u>	ļ
8	REMOVE BOLT (CODE 1005.03)		A A	В	G	M	<u> </u>		A	<u> </u>	
9	RICCED REMAIL EQUAT FORM		A	В	G	M	×	1	A A	 	
-1	RIGGER REMOVE EQUIPT FROM	6	A, B,G.						A ₆	 	40
	FOUNDATION	5	A _p B _p G							(3)4	3560
	TRAVEL		1		B P	741.		ВР		197	3300
10	//// C.C		A B G	A	ВР		A	ВР	Α		
	,		A B G	Α	ВР		Α	ВР	Α		
			A B G					8 P			
			A B G					B P			
 -		-	A B G					B P		-	
Ì			A B G					B P			
 		 	A B G			· ·		B P	_		
		 	A B G					B P		-	
 		1	A B G					ВР			
<u> </u>		2	<u> </u>					9	70		970
		3							10	4	1,640
		4							38	4	3352
		7						83		4	3352
<u> </u>		8	l					41	0	4	1,640
TIME	:=									14,	794

MOST - calculation

CODE 3004.14 DATE 4/19/84

SIGN.

HIGH PRESSURE AIR DEHYDRATOR INSTALLATION PAGE 10-123

ACTIVITY	FINAL	WELDING	OF	CHOCKS
CONDITION	s Moduli	= ARFA		

NO.	MODULE AREA	NO.	SEQUENCE MODEL		FR	TMU
1	GET WELDING WHIP	2	A BO G3 A		1.12	80
	GET WELDING WAIT	3	A ₃ B ₀ G ₀ (A ₁	B P A	4)4	172
2	INSERT ROD	1	A B G A	B P A	+	
3	PLACE ROD ON CHOCK		A B G A	в РА		
	FERCE RUD ON CHUCK	 	A B G A	B P A		<u> </u>
4	CLOSE SHIELD		A B G A	B P A	╁──	
5	WELD CHOCK		A B G A	в Р А		
	WELD CHUCK	 	A B G A	B P A	 	
6	OPEN SHIELD	-	A B G A	B P A	 	
7	THE OFET WE O AND ASIDE WILLD		A B G A	в р д		
	INSPECT WELD AND ASDE WHIP	-	A B G A	B P A	<u> </u>	
8	PAINTER PAINTS FOUNDATION	 	A B G A	B P A B P A	-	
			A B G A	в Р А		
		1	A B G A	B P A		0,
		14	A, B, G, M,	X ₀ I ₀ A ₀ X ₀ I ₀ A ₀	16	480
		5	(A, B6 G M,	Xsy lo A3	4)4	10040
		6	A, B, G, M,	Xo b Ao	16	480
		-	A B G M	x 1 A	 -	· ·
			A B G M	X I A		
			A B G M	X I A		
		7	A ₀ B ₃ G ₀ A ₀ B ₀ P ₀ T ₁ A B G A B P	A B P A	(16)	480
			ABGABP	ABPA	-	
			ABGABP	ABPA		
		<u> </u>	A B G A B P	ABPA		
		 	A B G A B P	ABPA		-
			ABGABP	АВРА		
		<u> </u>	ABGABP	ABPA		
		 	A B G A B P	ABPA		
			ABGABP	ABPA		
			ABGABP	АВРА		
		 	ABGABP	ABPA	 	· · · · ·
:				. <u> </u>		
TIME	=				13,	370

MOST - calculation

3004.15

DATE 4/19/84

SIGN. 7/6

Snip	building	-			SIG	N. TLC		
	HIGH PRESSURE AIR DEHYDRATO	RI	NSTALLA	TION		E 10-12	4	
ACTIV	INSTALL SELF LOCKING FA							
CONDI	TIONS SUB-ASSEMBLY AND MOC			4				
NO.	METHOD	NO.	SEQUENCE				FR	TMU
i			A B	G A	. В	P A		0
	RIGGER PLACE EQUIPT ON FON.	5		2 Gp (13)Bc		(4)	240
2	BOLT-49-557-49 (CODE 1005.02)		A B		В	P A	 	ļ
			A B	G A		P A	 	
3	POSITION BOLT (CODE 1005.03)		A B	G A		P A		
Ч	TURN BOLT (COOE 1005.05)-3/4"		A Ø	Ğ /	В	PΑ		
7	BOLT		A B		4 в	P A	 	ļ
5	TRAVEL		A B	G A	A B	P A		
			A B	G A		<u>Р А</u> Р А	-	
			АВ	G A		P A	-	
			A B	G /	В	PΑ		
			AB		А В	P A	<u> </u>	<u> </u>
			A B		A B	P A	-	
_			A B	G A	A B	P A	 	
			A B	G A		P A		
			АВ	G N		I A		
			A B	G N	ı x	ı A		
			A B	G N		I A	<u> </u>	<u> </u>
			A B	G N		I A		
			A B	G N		IA		
			АВ	G N		1 A		
			AB	G N	ı X	1 A		
			ABGA	ВР	A	BPA	<u> </u>	
			ABGA			BPA		
			A B G A			B P A	-	
			ABGA			B P A	 	
			ABGA			врА		
_ _			ABGA			ВРА		
			ABGA			BPA	 	ļ
			A B G A			ВРА		
			ABGA			B P A		
			ABGA			B P A		
			ABGA		Α	ВРА		
			ABGA	ВР	А	ВРА	L	
		2				970		970
		3				410	4	1640
		7				1215	7	4860
7::	<u>. </u>		L					
TIME	R_1458			·			7	710

MOST - calculation

CODE

3005.01

DATE 6/26/84

SIGN. TLC

BOAT HANDLING WINCH INSTALLATION PAGE 10-125

ACTIVITY JOB PREPARATION

CONDITIONS TATEGRATION AREA

	METHOD	NO.	SEQUEN	CE	MODE					FR	TMU
i	INITIAL AVERAGE JOB		A	В	G	A	В	Р	Α		<u> </u>
	PREPARATION (CODE 1001.12)		A	В	G	Α	В	Р	Α		<u> </u>
		<u></u>	A	В	G	A	В	Р	Α		
			A	В	G	Α	В	Р	_A		<u> </u>
			A	В	G	Α	8	Р	Α		<u> </u>
		<u> </u>	A	В	G	A	В	P	Α	<u> </u>	<u> </u>
			A	8	G	A	В	Р	A		ļ
			A	8	G	A	8	Р	Α	ļ	
		<u> </u>	A	В	G	<u> </u>	В	Р	Α	<u> </u>	ļ
		<u> </u>	A	В	G	<u>A</u>	В	P	Α_	ļ	ļ
		ļ	A	В	G	_ <u>A</u>	В	P	Α	ļ <u>.</u>	ļ <u> </u>
		ļ	A	В	<u> </u>	<u> </u>	В	P	<u>A</u>	<u> </u>	
			_ A	8	G	<u> </u>	В	P	<u>A</u>	 	
		-	A	<u>B</u>	G	Α .	В	<u> </u>	<u>A</u>	 	
		-	A	В	G	_ <u>A</u>	В	P	_A		
		 	A	8	G	<u>A</u>	<u>B</u>	<u> P</u>	A	┼	
		-	A	В	G	A	В	<u>Р</u>		 	
	•	+	A	B B	G G	A M	B X	P	A	 	
		 			<u> </u>	M	<u> </u>	<u> </u>	A		
		┼	A	В	G	<u>.;;</u>	$\frac{\lambda}{x}$		A	-	
		-	A		G	M	×	1	A		_
		1	A	В	G	M	×	1	A	-	-
			A	В	G	м	×	1	A		•
			А	В	G	М	×	1	A		
			A	В	G	М	×	ı	Α		
			A B G	Α	ВР		Α	ВР	Α		
			A B G	Α	ВР		Α	ВР	Α		
			A B G	Α	ВР		Α	ВР	Α		
			A B G	A	ВР		Α	в Р	Α		
			L		ВР			ВР			
			A B G		ВР			ВР			
			A B G					в Р			
		ļ	A B G	_				ВР		<u> </u>	
			ABG					ВР			
		 	ABG					ВР			
			A B G					8 P			ļ
		-	A B G					B P			
			A B G					B P		 	
		 	A B G		5 P				001		42 4-
			-					44	1 00	-	4200
			 								
		-			-				. ,		
	l	1	I							1	1

MOST - calculation

3005.02

59,484

DATE 6/26/84

SIGN. 72*C* BOAT HANDLING WINCH INSTALLATION PAGE 10-126 ACTIVITY AREA TRAVEL CONDITIONS INTEGRATION AREA NO. METHOD SEQUENCE MODEL В A R FROM TOOL BOX TO WET DOCK A В R A TOOL RM & RETURN (CODE 1002.16) A В G A В A A В G A R FROM TOOL BOX TO ELEVATOR FOR A ₿ G В A P A A 8 G Α В A INTEGRATED SHIP & RETURN A 8 G A . В В A A (CODE 1002, 15) A В G A В A A B G P В WAIT FOR ELEVATOR A В A G B B Ð A WALK ONTO, RIDE, I WALK OFF OF A В G В A A A R G 8 ELEVATOR В A В G A ₽ A SWING OPEN OR CLOSE OUTER DOORS Α В G Α P 3 Ap B G٥ Mo X5410 1080 4 SLIDE OPEN OR CLOSE INNER DOOR A/O BO GO MO X5410 1480 5 BO G MS XO In AQ. 400 WALK TO BOAT PLATFORM 6 A, Bo G M J Xo lo 400 AO Mo XD 3920 ON O2 LEVEL AND RETURN G X A G × FROM: TOOL BOX A G X 8 1 ABGA ABP : FREE STOCK BGA BP A B P BGABP ABP \$ RETURN (CODE 1002.17) BGA B P A B ВР ABPA BGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGA B P ABP BGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA 45,244 11,311 2 3040 1520 1960 3920

FORM R-1458

TIME -

MOST - calculation

3005.03 DATE 6/26/84

BOAT HANDLING WINCH INSTALLATION PAGE 10-127

ACTIVITY DRILL PADS

٧٥.	INTEGRATION AREA	NO.	SEQUEN	ICE M	ODE	Ļ				FR	TMI
1	Aluch On -		A	В	G	A	В	P	A		
]	ALIGN RULE		А	В	G	A	8	P	A		
2	00111011		A	В	G	Α	В	Р	A		
<u>د</u> ــــــ	DRAW DIAGONAL LINES		A	В	G	Α	В	Р	Α.		
3	0 = 1 = 0		А	В	G	A	В	Р	A		
ر 	CENTER PUNCH HOLES		А	8	G	Α	В	Р	Α		
1	DUT CHANN IN THE		А	8	G	A	8	Р	Α		
7	PUT CHOCK IN JIG		A	В	G	A	В	Р	Α	<u> </u>	
5	4114116- 00-		A	В	G	Α	В	Р	Α		
<u> </u>	CHANGE DRILL BIT		A	8	G	Α	В	Р	Α	<u> </u>	
	(A-0- 10-11 11)		A	8	G	_ <u>A</u>	В	Ρ	_A_		
	(CODE 1004,14)		A	В	G	Α	В	<u> </u>	_ <u>A</u>		
, 2	LIAMO ESSO ORINA SAMO SAMO		A_	8	G	Α	В	Р_	<u> </u>		
_	HAND FEED DRILL TO AND FROM		A_	В	G	<u> </u>	<u>B</u>	P	<u> </u>		
	WORKPIECE (CODE 1004.15)		A_	8	G	<u> </u>	В	P	<u>A</u>		
	WORKFIELE (CODE 1004.15)		A	_ <u>B</u>	<u> </u>	<u> </u>	<u>B</u>	<u>Р</u>	_A	-	
7	PROCESS THE COR DOWN		A		G	<u>A</u>		P	_ <u>A</u>		
	PROCESS TIME FOR DRILL	1	A .	8	G	A	В Х _О	P (13	A ₁)	(22)	92
	14 PILOT HOLE. (MATE AND CONO.	*	A	Bo	<u>6</u> 3	Mo		(1 3	_ <u>^</u> /	(29)	72
	" I FILD I HULE, (FINIL AND COND.		A		G	M	$\frac{x}{x}$	- -	_ A		
	CODE 0187 @ 1/4" DEPTH.)		A	8	G	M	^	÷	_ <u>_</u>	-	
	CUDE OTO E 114 DEFTA.7		A		G	M	$\frac{\hat{x}}{x}$	÷		 	
3	PROCESS TIME FOR DRILL		A	В	G	M	×	-	A		
	l .	-	A	В	G	М	$\frac{x}{x}$	1	A		
	3/4 " HOLE (MAT'L AND COND.		A	8	G	М	×	ī	Α		
		2,	A , 80 G	3 A A	B _D /P _s	A. R.)A,	B, P	Ao	(22)	110
	CODE 0187@ 1/4" DEPTH)	3	A I Bo G							(1)	95
		Ч				FEY		В Р		22	136
			A B G		ВР		A		Α		
			A B G	Α	ВР		Α	вР	Α		
			A B G	Α	ВР		Α	ВР	A		
			A B G	Α	ВР		A	8 P	Α		
			A B G	Α	в Р		A	ВР	Α		
			A B G	Α.	8 P		Α_	ВР	Α		
			A B G	Α	ВР		Α	8 P	A		
			A B G				A 1	3 P	Α		
			ABG					3· P			
			A B G					8 P		 	
			A B G	A	ВР		A	ВР	_		11/1
		5	<u> </u>						400	2	4,9
		6							530	Ш	58
		7	i						20		2.7
	1	8							39		42

FORM R-1458

MOST - calculation

CODE 3005.04 DATE 6/26/84 SIGN. TLC

	DOAT WALLOW WAS WILLIAM	. سـ	ودرسود ومسوال	Sidil. 12C		
<u> </u>	BOAT HANDLING WINCH	II	NSTALLATION_	PAGE /0-/2	8	
ACTIV	LAYOUT FOR DRILLING F	-04	NOATION			
CONDI	TINTE GRATION AREA					
NO.	METHOD	NO.	SEQUENCE MODEL		FR	TMU
	PLACE FON AGAINST WINCH	1	A 3 B 6 G 3 A 3			180
<u> </u>		6	A 3 B 0 G 3 A 3	BE PI AD	ļ	160
2	ALIGN FON.		A B G A	B P A		
3	HOLD FON. WITH C-CLAMP -22 W.T.		A B G A	B P A		
71			A B G A	ВРА		
4	SCRIBE HOLES		A B G A	B P A		
5	REMOVE C-CLAMP	<u> </u>	A B G A	B P A		
	KENTOVE C CERMI	 	A B G A	B P A		
6	ASIDE FON.	—	A B G A	B P A	 	
-	Anima Dustail in the		A B G A	ВРА		
	CENTER PUNCH HOLES		A B G A	в Р А		
			A B G A	B P A		<u> </u>
		-	A B G A	B P A		
}			A B G A	B P A		
		2	A, B, G, M,	Xo 1/6 Aa		190
			A B G M	X I A		
1			A B G M	X I A		
			A B G M	XIA		
ļ		 	A B G M	X 1 A	<u> </u>	
			A B G M	X I A		
			A B G M	X I A		
		3	A, BOG, A, BOP, Fy	A OBO O AO		460
<u> </u>		5	A 1 Bo G & Ao Bo PIA3 K	A BOP AO	(ii)	830
		7	A B G A B G A	2 A , B , P , A	/::\	480
		-	A B G A B P	A B P A	<u> </u>	000
	•		ABGABP	ABPA		
			ABGABP	ABPA		
		 	ABGABP	ABPA		
1		 	A B G A B P	ABPA		
 			ABGABP	A B P A		<u> </u>
<u> </u>			ABGABP	ABPA		
			ABGABP	АВРА		
<u> </u>			ABGABP	ABPA		`

TIME	•				3,3.	50

MOST - calculation

3005.05

DATE 6/26/84

29,329

BOAT HANDLING WINCH INSTALLATION

SIGN. TLC PAGE 10-129

	180A I HANDLING WING	7_4	142146	4	170	<u>/U</u>	Ji Ad		<u>9-7.</u>	29	
ACTIV	DRILL FOUNDATION										
OND	INTEGRATION AREA	_							<u></u>		
NO.	METHOD	NO.	SEQUEN	CE I	MODE	•				FR	T
110.	POSITION DRILL	7					~ R /	P) A3		TMU
1	(CODE 1004.11)	-	A	B	G G	A	3 5 6 B	<u>, 'c</u>	<u>у 73</u> А	(11)	1,120
<u> </u>	PLUG IN EXTENSION CORD	 	A	В	G	$\frac{2}{A}$	В	<u>.</u> Р			
2	(CODE 1004.12)		A	В	G	A	В	Р	A	 	
7	(CODE 1004 12) CHANGE DRILL BIT		A	В	G	A	В	P	A		
3	(CDOE 1004.14)		А	В	G	A	В	P	A	1	
4	HAND FEED DRILL BIT		Α	В	G	Α	В	Р	A	1	
	(CODE 1004.15) PROCESS TIME-DRILL YY' PILOT		A	В	G	Α	В	P	Α		
5	PROCESS TIME-DRILL YA" PILOT		A	В	G	Α	В	Р	Α		
<u> </u>	PROCESS TINE - DRILL 314" HOLE		A	В	G	Α	В	Р	Α		
6	PROCESS TIME - DRILL 314" HOLE	<u> </u>	Α_	В	G	Α_	В	P	A		
	(MATL CODE DI87)-114" DEPTH	<u> </u>	Α_	В	G	Α	В	Р	A		
7	TRAVEL	<u> </u>	A	8	G	A	В	<u> P</u>	A	-	
<u> </u>		ļ	A	В	G	<u> </u>	В	P	A		
			A	<u>B</u>	G	A	B	<u>P</u>	<u>A</u>	-	
		 	A	<u>B</u>	G	<u> </u>	<u>B</u>	P	<u>A</u>		
			A	<u>B</u>	G	<u>A</u>	В	P	A	+	
		 	A	В	G G	A M	B X	P	<u>A</u>	-	
		 	+	В	G			<u></u>			
			A	В	G	M M	X X	<u> </u>	A	-	
			A	В	G	M	×		A		
			A	В	G	M	×	<u> </u>	A	 	
			A	В	G	М	x	1	Α		
			А	В	G	M	x	1	A		
			А	В	G	M	×	ı	Α		
			ABG	Α	ВР		Á	B F	^ A		
			ABG	Α	ВР		Α	ВР	• A		
			ABG	Α	ВР		Α	ВР) A		
			A B G	A	ВР		Α	В Р	Α		
			A B G				Α	ВР	Α		
			A B G				. A			[]	
			A B G					ВР			
			ABG	-				ВР		 	
			A B G					B P			
			A B G					B P		 	
			A B G					ВР		 	
		-		<u> </u>	0 P		A	ВР	740	,,	91110
		2					-		960	11	0,170
		3	 						400	2	7,70 C
			 						30	22	4,80C
		<i>4</i> 5	<u> </u>						20	11	220

FORM R-1458

TIME =

MOST - calculation

3005.06

DATE 6/26/84 SIGN. TLC

BOAT HANDLING WINCH INSTALLATION PAGE

PAGE 10-130

ACTIVITY INSTALL TEMPORARY BOLTS

OND!	TIONS INTEGRATION AREA										
NO.	METHOD	NO.	SEQUE	VCE I	MODE	<u>. </u>				FR	TMU
	SET-UP TO BOLT-UP	2	A		G,		В	P2	Α,	1/	770
-	(CODE 1005.02)	5		2 B	G	A 2	B 4	Po) A3	11	1.110
_	(CODE 1005.02) PLACE PADS ON FOUNDATION	-	A	В	G G	A	В	P	A		1-1,112
2			А	В	G	Α	В	P	Α		
•	POSITION BOLT		A	В	G	Α	В	P	Α		
3	(CODE 100 5.03) BOLT-UP		A	В	G	Α	В	P	Α		
4	BOUT-UP	<u> </u>	A	B	G	A	8	P	<u> </u>	<u> </u>	<u> </u>
<u>.</u>	(CODE 1005.04)-34"BOLT	 	A	<u>B</u>	G	<u> </u>	В	P	<u>A</u>	├	
5	TRAVEL	 	A	B	G	Α	<u>B</u>	<u> </u>	<u> </u>	 	
-			A	B	G	<u>A</u>	<u>B</u>	<u>P</u>	A	-	
		-	A A	<u>B</u> _	G	_ <u>A</u> _	В	P P	A		├
		 	A	<u>B</u>	G G	A	B	P	A	 	
		-	A	 B	G		В	P		1	
		†	A	В	G	A	В	P	A		
			A	8	G	A	В	P	A		
			A	В	G	Α	В	Р	A		
			Α	В	G	Α	В	Р	Α		
	•		A	В	G	M	х	1	Α		
			A	В	G	M	х	1	Α		
			A	В	G	М	x	_!	Α	<u> </u>	ļ
		ļ	A .	B	G	M	<u> </u>	-!-	<u>A</u>	<u> </u>	ļ
			A	B	G	M	<u> </u>		Ä	 -	
			A		G G	M	×	<u> </u>	<u> </u>	 	
			A	В	G	M	<u>x</u>	÷	A A		
					ВР			ВР			
			<u> </u>		ВР			ВР		1	
					ВР			ВР		 	
			АВ	3 A	ВР		A	ВР	Α		
			A B	3 A	ВР		A	ВР	A		
			ав (ВР			
			A B					ВР			
		 	АВО					ВР			
			ABC					ВР			
		 	ABC					B P		 	
			ABC					ВР			ļ <u>.</u>
		 	ABC					B P		 	
		}	ABC					B P		 	
		1-,	 			-			970	 	97
	,	3	 						410	1/	4510
		4	 						838		9218
			 						# <u>24</u>	''-	1210

MOST - calculation

CODE

3005.0

DATE 6/26/84

SIGN. TLC
PAGE 10 -/3

BOAT HANDLING WINCH INSTALLATION

ACTIVITY

WELD PADS

10.	METHOD	NO.	SEQUENCE MODEL	FR	Τ
,	PLACE WELDING MASK	1	A B G A B P AO		F
l		2	A 3 B 0 G , A 3 B 0 P 0 A 3		ŀ
 2	GET WELDING WHIP	5	A B G G (A) B 6 P3) A 0	4)11	
<u> </u>		6	ADB GO A BOP, AO		
3	FEED WIRE	<u> </u>	A B G A B P A		Ļ
		 	A B G A B P A	ļ	╀
1	RAISE & LOWER MASK		A B G A B P A A B G A B P A		ļ
	Pasition the		A B G A B P A	-	ŀ
ĵ	POSITION WHIP	-	A B G A B P A	 	ł
	ASIDE WHIP	+	A B G A B P A	 	ł
, o	Market William		A B G A B P A		t
7	WELD	1	A B G A B P A		t
<u>/</u>	(9 SES PER SIDE) (3X3"ALUM)		ABGABPA		
3 3	INSPECT WELD		A B G A B P A		Ĺ
0			A B G A B P A		ļ
1	WAIT FOR WELD TO		ABGABPA		Ļ
<u> </u>	COOL (IOMIN)	13	A B G A B P A		ŀ
			A 1 Bo G, M, Xo lo Ao	15/11/1	ŀ
		17	(A Bo G M X 0 10 A0)	6011	ŀ
		9	Ao Bo G p Mo X33010 Ao		
		1	A B G M X I A	2.03	L
			A B G M X I A		Γ
		T	A B G M X I A		Γ
			A B G M X I A		
		8		(४) ।।	L
		<u> </u>	ABGABP ABPA		L
			ABGABP ABPA		H
			A B G A B P A B P A		ŀ
		\vdash	ABGABP ABPA ABGABP ABPA		L
		-	ABGABP ABPA		r
		-	ABGABP ABPA		i
		1	ABGABP ABPA		-
			ABGABP ABPA		_
			ABGABP ABPA		ĺ
			ABGABP ABPA		Ĺ
		<u></u>	A B G A B P A B P A		L
		↓	A B G A B P A B P A		-
			·		r
		1			-
		 			۲
		<u> </u>	L .		L

MOST - calculation

3005.08

DATE 6/26/89 SIGN. TLC

BOAT HANDLING WINCH INSTALLATION PAGE 10-132

ACTIVITY INSTALL FITTED BOLTS

NO.	INTEGRATION AREA	NO.	SEQUEN	ICE M	ODEL		•			FR	TMU
,	SETHP TOUN BOLT	4	Α.	3 B 6	Ga	Αz	В,	Pe	AO		210
1	((ODE 1005.02)		A	В	G			_	A		
_	UNBOLT & BOLT-UP (CODE 1005.04) 34" BOLT REMOVE & INSTALL BOLTS (CODE 1005.03)		A	В	G	Α	В	P	A		
2	(CODE 1005.04) 3/4" BOLT		Α	В	G	Α	В	P	A		
2	REMOVE & INSTALL BOLTS		Α	В	G	Α	В	Р	A		
3	(CODE 1005.03)		Α	8	G	Α	В	Р	Α		
4	PLACE FOUNDATION AGAINST		Α	B	G	Α	В	Р	Α		
7_	WINCH		Α	В	G	Α	В	Р	A		
ے	PLUGIN EXTENSION CORD		Α	В	G	Α	В	P	Α		
<u>s</u>	(CODE 1004.13)		A	В	G	Α	В	Р	Α		
6	CHANGE REAMER		A	В	G	Α	В	Р	Α		
0	HAND FEED REAM TO & FROM		А	В	G	Α	В	P	Α		
7	HAND PEED REAM TO & PROM		A	В	G	A	В	P	Α		
	REAM HOLES		Α	В	G	Α	В	P	A		
8	REAM HOLES		Α	В	G	Α	В	P	Α		
0	(12.33 SELS/HOLE)		A	8	G	Α	В	P	Α		
9	TAP BOLTS		Α	В	G	Α		Р	Α		
		-	Α	В	G	Α	В	P	A		
		8	A 1					210		11	<u>3,850</u>
			Α	В	G	М	X	1	Α		
			A	В	G	М	X	<u> </u>	A		
			A	<u>В</u> В	G	M	×	1	A		
		 	A		G	M	<u>^</u>	' -	A		
			A	B	G	M	<u>x</u> _	.			
		 	A	 B	G	M	$\frac{x}{x}$	' -	A		

			-	١	В	•	3	M	X		t	A		
	9	A	8 By	G,	A	B	(P,	AzFil)A,	B	, P	A 3	(21)	4 46
		Α			Α					В				7
		A	В	G	Α	В	P		Α	В	P	A		
		Α	В	G	A	В	Р		Α	В	Р	A		
·		Α	В	G	Α	В	P		Α	В	P	A		
		Α	В	G	Α	В	Р		Α	В	P	Α		
		Α	В	G	A	В	P		Α	В	P	A		
		Α	В	G	Α	В	P		Α	В	Р	A		
		А	В	G	Α	В	P		Α	В	P	A		
		Α	В	G	Α	В	Р		Α	В	P	Α		
		Α	В	G	Α	В	P		Α	8	P	A		
	1											970		970
	2											838	32	26,814
· · · · · · · · · · · · · · · · · · ·	3											HID	32	13,120
	5										- 2	2960		2,96

TIME =

55,996

2400 110

MOST - calculation

3005.09

SIGN. TLC

CODE

BOAT HANDLING WINCH INSTALLATION PAGE 10-133

ACTIVITY FILE PARS

10.	INTEGRATION AREA	NO.	SEQUENC	E M	ODEL					FR
]	CHECK PADS WITH FEETER	5	Α,	Во	G 2	Α _λ	B6	Ρ,	Αż	2
l	GAGE	6	A 3	B 6	G,	(A3	BL	Pg.	A _D)	15)4
	LINBALT	8				Αą			Ao	2.
2	(CODE 1005.04)-3/4"BOLT		Α	В	G	A	В	Р	Α	
	(CODE 1005.04)-314"BOLT REMOVE BOLTS		Α	В	G	Α	В	Р	Α	
3	(CODE 1005.03)		Α	В	G	Α	В	Ρ	Α	
,	(CODE 1005.03) TAP BOLTS (16 TAPS)		Α	8	G	A	В	P	Α	
1			A	В	G	Α	В	Р	Α	
5	ASIDE FOUNDATION	L	A	В	G	Α	В	P	A	
)			A	В	G	Α	В	P	Α	
•	USE LEVEL		A	В	G	Α	В	Р	Α	<u> </u>
<u> </u>			Α	В	G	Α	В	P	Α	ļ
7	FILE PADS	<u></u>	A	8	G	Α	В	Р	Α	
<u></u>	4440		A	В	G	Α	В	P	A	ļ
3	PLACE FOUNDATION TO EQUIPMENT		A	В	G	<u> </u>	В	Р	Α	
<u> </u>		ļ	A	8	G	Α	В	Р	Α	
9	POSITION BOLTS	<u></u>	A	В	G	A	8	P	Α	<u> </u>
<u></u>	(CODE 1005.03)		Α	8	G	A /	8	P	A	-
_	TAP BOLTS	7	A 3	B <u>(</u>		(M3		<u> </u>		(1245)
0		ļ	Α	В	G	M	X	!	<u> </u>	ļ
1	BOLT-UP (CODE 1005.04) 3/4 BOLT	 _	A	8	G	M	<u> </u>	<u> </u>	<u> </u>	1
<u>/_</u>	(CODE 1005.04) 3/4 BOLT	ļ	A	B	G	M	$\frac{x}{x}$	1	A	├
			A	В	G	M	$\frac{\hat{x}}{x}$	÷		├
		 	A	В	G	M	$\frac{\hat{x}}{x}$.	_ _	├
			A	<u>В</u>	G	M	$\frac{\hat{x}}{x}$	÷	<u> </u>	
		1	A3 B6 G3					-		(II) 8
		4	A, B, G							
		6	AOBOG							
			AJBG	Δ.	3./p.	A.L.	A.F	3 - P.	Α.	111/2
		10	A B G			7-1-16		3 P		MY.
			A B G			-		3 P	_	
			A B G					3 P		
		-	A B G					3 P		
			A B G				A E	3 P	A	
			ABG					3 P		
			A B G	A E	P		АВ	P	A	
			ABG	AE	3 P		АВ	Р	Α	
			A B G	A E	3 P		A E	P	Α	
			A B G				A E	3 P	A	
		2						$\exists 7$	838)	(11) 2
		3		. :					410)	
		9							110	
		Ti							338	

MOST - calculation

3005.10 DATE 6/26/84

SIGN. TLC

BOAT HANDLING WINCH INSTALLATION

PAGE 10-134

ACTIVITY REMOVE TEMPORARY BOLTS

CONDI	INTEGRATION AREA										- ·
NO.	METHOD	NO.	SEQUEN	ICE N	IODE	L				FR	TMU
•	GANTRY LANDS WINCH AND FOUNDATION	T	A	В	G	Α	В	Р	Α		0
1	ASSEMBLY IN POSITION	2	А	В	G	A	В	Р	Α	1	o
2	SHIP FITTER TACK WELDS WINCH	3	А	В	G	Α	В	Р	A	1	0
4	INTO POSITION	8	Α	В	G	Α	В	Р	Α		0
3	PRODUCTION WELDER FINISH WELDS	9	A	В	G	Α	В	Р	Α		0 0 0
	FOUNDATION	10	A_	8	G	<u>A</u>	B	Р	Α	 	0
4	SET-41 TO 4N BOLT (CODE 1005.02)		A		G	<u> </u>	В	P	A	ļ	
	(CODE 1005.02)		A .	B	<u>G</u> _	_ <u>A</u>	<u>B</u>	P	<u> </u>		
5	UNBOLT BOLTS (CODE 100 5.04) - 3/4" BOLT TAP BOLT (INCUDES TRAVEL)		A	B	G	<u> </u>	<u></u>	P	<u> </u>		
****	TAP BOLT (INCLIPES TRAVEL)		A		G G	_ <u>A</u>	<u>B</u> 	P P	A	 	
6	,,,, 200, (21, 200, 23, 1, 1, 1, 1, 200, 23)	<u> </u>	Ā	В	G		В	P	A		
_	REMOVE BOLT		A	В	G	- <u>-</u> -	В	P	- - -	 	
7	(LODE 1005,03)		А	В	G	A	В	Р	A	1	
0	GANTRY REMOVES WINCH		А	В	G	Α	В	P	A		
8			Α	В	G	Α	В	P	Α		
9	PAINTER PAINTS FOUNDATION		A	В	G	Α	В	P	Α_		
- 1	A. A. A. C. A. C. A. A. A. A. A. A. A. A. A. A. A. A. A.		A_	В	G	Α_	В	Р	Α		
10	GANTRY REPLACES WINCH		A	В	G	М	х	1	Α		
10			<u>A</u>	В	G	M	X	_1_	A	ļ	
			A .	<u>B</u>	G	M	<u> </u>		<u> </u>		-
			A	<u>B</u>	G	M	×	1	A		· · · · · · · · · · · · · · · · · · ·
			A	В	G	M	<u>^</u>	<u> </u>		-	
			А	В	G	M	×	<u> </u>	A		
			А	В	G	М	×	1	A		
		6	A 2 8 G	Ad	86 Pr	AZL	()AZ	B _c P _c	AO	(11)	3,070
			A B G				A	ВР	A	1	-
			ABG	Α	ВР		Α	ВР	Α		
			ABG	Α	ВР		Α	ВР	A		
	·		A B G					ВР			
			A B G					B P			
			A B G					B P			
			A B G					B P		-	
	!		A B G					B P B P			
			A B G					B P		 	
			A B G					B P			
			A B G					ВР			
			A B G					ВР			
	ĺ	4							970		970
		5							838	1/	9218
		7							410	//	4510
TIME	-								1	17,	768

TIME =

MOST - calculation

CODE

3005.11

DATE 6/26/84

BOAT HANDLING WINCH INSTALLATION PAGE 10-135

ACTI	INSTALL PERMANENT										
OND	INTEGRATION AREA	+									
NO.	METHOD	NO.	SEQUEN	ICE N	ODE					FR	Ţ.
	SET-UP TO BOLT-UP		А	В	G	A	В	Р	A		Ţ
l			А	В	G	A	В	Р	Α		T
_	CCODE 1005.02) POSITION BOLT		А	В	G	Α	В	Р	A		T
	(CODE 1005.03)		A	В	G	A	В	Р	A		Γ
	TAP BOLT (INCLUPES TRAVEL)		А	В	G	A	В	P	Ά		Γ
			А	В	G	Α	В	P	Α		Γ
	BOLT-UP		A	8	G	A	В	Р	Α		
	CCODE 1005.05)-314 BOLT		A	В	G	Α.	В	P	Α		L
_			Α	В	G	Α	В	P	Α		L
			А	В	G	Α	В	Р	Α	<u> </u>	L
			A	В	G	A	В	Р	Α	<u> </u>	Ļ
_			A	В	G	Α	В	Р	A	<u> </u>	L
_			A	8	G	A	_ <u>B</u>	Р	Α	 	Ļ
_			A	8	G	A	В	Р	Α		Ļ
		<u> </u>	A	В	G	A	В	P	_ <u>A</u>		╀
			A	8	G	A	В	Р	Α	ļ	╀
		<u> </u>	Α.	В	G	<u> </u>	8	Р	<u> </u>		╀
_		<u> </u>	A .	<u>B</u>	<u> </u>	_A_	В	<u> P</u>	<u> </u>		╀
	·		A	8	G	М	<u> </u>	1	<u>A</u>		┞
_			A	<u>B</u>	G	M	<u> </u>	!	<u> </u>	<u> </u>	┞
			A	8	G	M	X	<u>!</u>	<u> </u>		H
,			A		G	M	×	-	A		╀
		 		B	G	M	$\frac{\hat{x}}{x}$	<u> </u>	_		╁
		ļ	A	В	G	M	$\frac{\hat{x}}{x}$	$\dot{}$	- <u>A</u>		╁
		 -	A	В	G	M	$\frac{\hat{x}}{x}$	-i-	$\frac{7}{A}$	-	┝
-		3	A - B - G	Α.	В. Р	A.F.	. A.	B. P.	A	(11)	H
		-3 -	A B G	3 . C	(<u>6 1</u>	-37	$\frac{(6)^{13}}{\Delta}$	70) R P	$\frac{\cdots D}{\Delta}$	1117	H
-		_	ABG					ВР			┢
			АВС	-				ВР			t
_	<u> </u>	 -	АВС					B P			H
			A B G					ВР			H
_			A B G	Α	вР			вР			Γ
			A B G				A	вР	A		Ŀ
_			A B G	Α	вР		Α	ВР	A		-
			A B G	Α	вР		Α	вР	Α		Ŀ
_			A B G	Α	ВР		Α	ВР	Α		Ŀ
			A B G	Α	ВР		Α	в Р	Α		L
			A B G					ВР			L
			A B G	Α	ВР		Α	ВР			L
		1							970		L
		2							4/0		1
		4							215	11	L
	1									I.	П

MOST - calculation

VANEAXIAL FAN INSTALLATION

3006.01

DATE 5/9/84

SIGN. TLC

PAGE 10-136

ACTIVITY

JOB PREPARATION

CONDITIONS

ASSEMBLY AREA

			_								-,	
NO.	METHOD	NO.	SEQU	ENC	EM	ODE	L				FR	TMU
,	SIMPLE INITIAL JOB PREPARATION		A		В	G	Α	В	F	^ A	<u> </u>	
1	(CODE 1001.11) OBTAIN BOLTS FROM FREE STOCK		Α		В	G	Α	B	F	A		
.	OBTAIN BOLTS FROM FREE STOCK		А		B	G	A	В	F	A		
2	(LODE 1001.121)		А		В	G	Α	В	E	A		
		l	А		В	G	Α	В	F	A		
			А		B	G	Α	В	-	РА		
			A		В	G	Α	В	F	P A		
			А		8	G	Α	В		P A		
			А		В	G	Α	В	F	A		
			Α		В	G	Α	В	F	• A		
			Α		В	G	Α	В	P	A		
			А		В	G	Α	В	F	A		
			Α		В	G	Α	В	P	A		
			Α		В	G	Α	В	F	A		
			А		В	G	Α	В	F	, A		
			Α		В	G	Α	В	F	P A		
			A		В	G	Α	В	P	A		
			Α		В	G	Α	В	P	Α		
	•		А		В	G	M	X	1	Α		
			Α		В	G	M	X	1	Α_		
			А		В	G	М	Х	1	Α		
			Α		В	G	М	X	ı	Α		
			Α		8	G	М	Х		Α		
			А		В	G	M	X		Α		
			Α		В	G	М	х	1	Α		
			А		8	G	M	Х	ı	A		
			А В	G	Α	ВР		Α	В	PA		
			А В			ВР		_ A	В	РА		
			АВ	G	A	ВР		Α	В	PA		
			A B	G	A	ВР		Α	В	PΑ		
						ВР		Α	В	PA		
						ВР				PΑ		
			A B				·			PA	<u> </u>	
			АВ							PA	<u> </u>	
			A B							PA		
			АВ	_					_	РА		
			АВ							PA	<u> </u>	
			АВ							PA		
ł			А В							PA		
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ļ										12050		12,05
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l	ļ											
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MOST - calculation

3006.02 DATE 5/9/84

SIGN. TLC

VANEAXIAL FAN INSTALLATION

PAGE 10-137

ACTIVITY	AREAL	TRAVEL
CONDITION	is .	

COND	ASSEMBLY AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR
	FROM TOOL BOX TO ASSEMBLY 102	3	A o Bo G o A 2 y B o P A Z y
1	LAPDER (CODE 1002.19) & RETURN FROM ASSY. 102 LADDER, TO 2ND		A B G A B P A
	FROM ASSY 102 LADDER TO 2ND		ABGABPA
2	PLATFORM DECKEDGE & RETURN FROM ZNO PLATFORM DECK EDGE		A B G A B P A
	FROM 2 NO PLATFORM DECK EDGE		A B G A B P A
3	TO COS SUGI & RETURN		A B G A B P A
	TO SIDE SHELL & RETURN FROM TOOL ROOM TO FREE STOCK FRETURN		A B G A B P A
4	(4-2-1003 17)		A B G A B P A
	(CODE 1002.17)		A B G A B P A
5	BOOT MOTIONS FOR		
	ELEMENT NO. 2		A B G A B P A
		<u> </u>	A B G A B P A
			A B G A B P A
		<u> </u>	A B G A B P A
			A B G A B P A
			A B G A B P A
		L	A B G A B P A
		L	A B G A B P A
			A B G A B P A
		5	A O B/6 G O M O X O I O A O
		Z	(A BO G M3) XO 10 A0 (20) 2
			A B G M X I A
			ABGMXIA
			A B G M X I A
			A B G M X I A
			A B G M X I A
		 	A B G M X I A
			A B G A B P A B P A
			ABGABP ABPA
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
		<u> </u>	A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
			ABGABP ABPA
			ABGABP ABPA .
			ABGABP ABPA
			ABGABP ABPA
			ABGABP ABPA
		1	3000 2
		4	1160 2
		 	
			
		i	1
TIM	E =		12,5

MOST - calculation

3006.03

DATE 5/1/84

VANEAXIAL FAN INSTALLATION

SIGN. **TLC** PAGE 10-138

ACTIVITY D

REMOVE TEMPORARY MOUNTS

COND	ASSEMBLY AREA											
NO.	METHOD	NO.	SEC	UEN	CE M	ODEL		•			FR	TMU
		4				G _O		Bo	PO	AO	3	90
	SET-UP TO BOLT UP	5		Aø		Gø				Ao	3	90
	C-0= 100 = 00	6		Aø			A a				3	10
	CODE 1005.02	7	Ц_	A _O	B 0	Gø					3	90
2.0	TURN BOLT (LOOE 1005.04) - 1/2" BOLT	8	 			Go				Ao	3	90
2.1	TURN BOLT (CODE 100 5.04) - 518" BOLT	1 9	+							Ao		0
3	REMOVE BOLT (CODE 1005.03)	10	+	A A		G,	A A	<u>в</u> о	P ₁	AO	4	80
4	MOVE FROM TO OL BAG TO 1ST	ļ		A	В	G	A	В	P	A		
· ·		 	┼─	A	В	G	A	B B	P	A A	-	
	1st MOUNT			A A	В	G		В	÷	A	┼──	
-	Marian ma			Α	В	G	A	В	P	A		
<u>၁</u>	MOVE FROM 1ST MOUNT			Α	В	G	Α	В	Р	A		
,	TO 2NO MOUNT			A	В	G	Α	В	Р	Α		
	10 200 1001		ļ	A	В	G	Α	В	Р	Α		
6	MOVE FROM 2ND MOUNT	 	 	<u>A</u>	<u>B</u>	G	<u>A</u>	В	Р	Α	ļ	
			╁	<u>A</u>	B B	G G	A M	B X	P	A A		
	TO 3RD MOUNT		+	A	В	G	<u></u> М	$\frac{\hat{x}}{x}$	- ;	A		
7				$\frac{2}{A}$	В	G	M	$\frac{\hat{x}}{x}$	-	$\frac{2}{A}$		
7	MOVE FROM BRD MOUNT TO			Α	В	G	M	x	ı	A		
	4th MOUNT			A	B B	G G	M M	×	ı	A		
8	MOVE FROM 4th MOUNT TO			A A	B B	G G	M M	x x	1	A		
	TOOL BAG		 	B G B G		B P B P		A	B P			
9	RIGGERS REMOVE FAN FROM		A E	3 G	Α	ВР		Α	ВР	Α		
	VIGGEVO VELIGIE LAM LYONA		A E	B G	Α	ВР		A	3 P	Α		
	FOUNDATION				A			A	ВР	A		
	_		-	G					3 P		<u> </u>	
10	REMOVE TEM PORARY MOUNTS			3 G					3 P B P			
•			 	G			 -		3 P			
				G					3 P			
				G					3 P			
				G					P			
j				G					3 P			
			A B	G	A E	5 P		A E	3 P		 	C==
	}	20	-							70_		970
		2.0							70	59	8	7472
		3							41		12	4,920
TIME	•											
	D 14E0									į	13,	724

MOST - calculation

3006.04 DATE 5/9/84 SIGN. TLC

PAGE 10-139

VANEAXIAL FAN INSTALLATION

ACTIVITY

REMOVE COVERS AND BRACKETS

CONDITIONS

ASSEMBLY AREA

	ASSEMBLY AREA				_
NO.	METHOD	4	SEQUENCE MODEL	FR	Ļ
1	SET-UP TO BOLT-UP	4	Ao Bo Go A3 Bo Po Ao		丄
ı	(CODE 1005.01)	6	A 3 86 G3 A3 80 P3 A0	<u> </u>	\perp
2	TURN BOLT	7	A3 B6 G3 A3 B0 P0 A	<u> </u>	_
_	(CODE 1005.06) - 12" BOLTS	10	A3 B0 G3 A3 B0 P1 A0	3	$oxedsymbol{oxed}$
3	REMOVE BOLT	Ш	ABGABPA		
)	(CODE 1005.03)	5	An Bo Go A 3 Bo Po Ao		L
4	MOVE FROM TOOL BAG TO MOUNT NO. 1	8	Ao Bo Go A3 Be Po Ao		上
l		9	A o B o G o Ao B o Po AZ	L	
	MOVE FROM HOUNT NO. 1 TO MOUNT NO. 2	L	ABGABPA		L
5			A B G A B P A		
1	TUKN FAN 4PSIDE DOWN		ABGABPA		
6			A B G A B P A		
2	MOVE FROM HOUNT NO. 2 TO MOUNT NO. 3		ABGABPA		
7			A B G A B P A		
0	MOVE FROM MOUNTNO. 3 TO MOUNT NO.4		A B G A B P A		
8			A B G A B P A		
a	MOVE FROM MOUNTNO.4 TO TOOL BAG		ABGABPA		Γ
9			A B G A B P A		\Box
	TAKE BRACKETS & COVERS TO		A B G M X I A		\Box
10	TOOL BAG		A B G M X I A		Γ
	PAINTER PAINTS BRACKETS AND		A B G M X I A		Г
11	FOUNDATION		A B G M X I A		Γ
			A B G M X I A	•	Γ
			A B G M X I A		Γ
			A B G M X I A		\sqcap
			A B G M X I A		Π
			ABGABP ABPA		Γ
			ABGABP ABPA		\sqcap
			ABGABP ABPA		Π
	,		A B G A B P A B P A		
			ABGABP ABPA		Г
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		Π
			ABGABP ABPA		
			ABGABP ABPA		Γ
			ABGABP ABPA		\top
			ABGABP ABPA		Т
			ABGABP ABPA		Г
		1	860		П
		2	753	16	1/5
		3	410	16	12
		<u> </u>	7,0	18	۳
TIME	-			23,	<u>'</u> 41€

MOST - calculation

CODE 3006.05 DATE 5/9/84 SIGN. TLC

VANEAXIAL FAN INSTALLATION

PAGE 10-140

NO.	ASSEMBLY AREA	NO.	SEQUEN	CE N	AODEL					FR	TMU
1	GET BRACKETS & COVERS	1	A ₃	В,	9 G 3	A 3	ВО	P3	A O	3	360
l	,	2							Ao		360
J	PLACE BRACKETS & COVERS IN POSITION	5			G						36
2		6	EA_	B	G 3	A3	B0	P-3	A O		180
3	POSITION BOLT	7							Ao		180
	(LODE 1005 - 03)	8			Go					 	30
4	TURN BOLT (CODE 1005.06) - 42" BOLT	9			G _b		Bo			 	30
-' -	TRAVEL FROM MOUNT NO. 1	 	A	<u>B</u>	G	A	<u>8</u>	P	A		
5	TO MOUNT NO. Z	 	A	В			В				ļ
_	TURN FAN UPSIDE DOWN	_	A	В	G	A		P	_ <u>A</u>	 	<u>. </u>
6	Table 17110 UF BIDE DOME	-	A	В	G	A	В	P	A		
_	TRAVEL FROM MOUNT NO. 2 TO		Α	В	G	A	В	Р	A		
7	MOUNT NO. 3		Α	В	G	Α	В	P	Α		
8	TRAVEL FROM MOUNT NO.3 TO		А	В	G	Α	В	P	A		
0	HOUNT NO.4		Α_	В	G	Α	В	Р	Α		
9	TRAVEL FROM MOUNT NO. 4 TO		A	В	G	Α	В	P	A		
-	TOOL BAG AREA .		Α_	В	G	<u>A</u>	В	P	Α	<u> </u>	<u> </u>
	·		A	В	G	M	X		Α	 	
			A .	<u>B</u>	G	M	X	 -	<u> </u>		
			A	B	G	M M	X	<u> </u>	A		
			A	В	G	M	$\frac{x}{x}$	i	$\frac{2}{A}$	-	
			A	В	G	M	x	ı		-	
			A	В	G	M	×	ı	A		
			Α	В	G	М	X	ı	A		
			ABG	Α	ВР		Α	ВР	A		
			A B G	Α	ВР		Α	ВР	Α		
			ABG	Α	ВР		Α .	ВР	A		
			ABG					ВР			
		<u> </u>	ABG					ВР			
			A B G					B P			
			ABG					B P			
			A B G				_	B P			
			ABG					B P			
			A B G					3 P			
			A B G					3 P			
			A B G					3 P			
			A B G	Α	ВР		A	3 P	Α		
1		3							410	16	6560
I		4							953	16	6560 15248
											,

MOST - calculation

3006.06

DATE 5/9/84

SIGN. 72C PAGE 10-141

VANEAXIAL FAN INSTALLATION

ACTIVITY INSTALL RESILIENT MOUNTS

NO.	METHOD	NO.	SEQU	ENC	E M	ODEL					FR	TMU
¥O.	FROM TOOL BAG TO POSITION NA.1		-	<u> </u>	Bo	Go	A 2	ВД	Pa	Αz		120
1	& RETURN	2		_ _ _		Go		X_				120
	FROM TOOL BAG TO POSITION NO. 2	3				G٥						- 120
2	S' RETURN	4		40		Go				A 3		120
	FROM TOOL BAG TO POSITION NO. 3	 		<u>, </u>	В	G	A3		P	A		
3	FRE TURN			<u> </u>	В	G	A	В	Р	Α		
7.	FROM TOOL BAG TO POSITION NO.4			4	В	G	A	В	P	A		
4	RETURN		-	A	В	G	Α	В	Р	Α		
	POSITION BOLT		-	A	В	G	Α	В	Р	Α		
5	(CODE 100 5.03)			Α	В	G	Α	8	P	Α		
	1 CT		1	Α	В	G	Α	В	Р	Α		
6	(cope 1005.05) - 1/2" BOLT			Α	В	G	Α	В	Р	A		
				<u> </u>	B	G	A	В	Р	Α		
				A	В	G	Α	В	Р	Α		
				Α	В	G	Α	В	Ρ	Α		
				<u> </u>	В	G	Α_	В	Р	Α		
				Α	В	G	_A_	В	P	<u>A</u>		
				<u>A</u>	<u>B</u>	_ <u>G</u> _	<u>A</u>	B	<u>P</u>	<u>A</u>		
	·	-		<u> </u>	В	G	M	X	<u> </u>	<u> </u>		
				<u> </u>	<u>B</u>	_ <u>G</u>	<u>M</u> _	~	- -	_ <u>A</u>		
		-		<u> </u>	В	G	<u>M</u>	×	<u> </u>	A		
		-		<u>A</u> A	B B	G	M	×	-	$\frac{2}{A}$		
				<u> </u>	В.	G	M	×	1			
					В	G	M	$\frac{\hat{x}}{x}$	1	A		
•				Ā	В	G	М	×	1	A		
			A B	G	A	ВР		A	в Р	Α		
			АВ	G	A	ВР		A	ВР	Α		
		 			_	ВР		Α	ВР	Α		
						ВР		A	ВР	Α		
		1				ВР		A	ВР	A		
						вР		Α	ВР	Α		
			А В	G	Α	в Р			ВР		L	
			АВ	G	Α	вР		Α	ВР	Α	L	
			А В	G	Α	вР			ВР			
	-		АВ	G	Α	ВР			ВР		<u> </u>	-
						ВР			ВР		ļ	ļ
					_	ВР			ВР			<u> </u>
		<u></u>				ВР			ВР		 	
		 	A B	G	<u> </u>	ВР		Α	ВР		-	
		5									8	328
		6	L							810	8	648
											 	
	I	1	ł								1	ı

TIME =

MOST - calculation

CODE

3006.07

DATE 5/9/84

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VANEAXIAL FAN INSTALLATION PAGE 10-142 ACTIVITY FAN AND BRACKET ASSEMBLY TO RESILIENT MOUNTS CONDITIONS ASSEMBLY AREA METHOD SEQUENCE MODEL NO. TMU RIGGERS PLACE FAN AND G 0 BRACKET ASSEMBLY ON RESILIENT MOUNTS AZ A 2 B , G , (A 9 BG Po (z) 240 SET-UP TO BOLT-UP (CODE 1005.02) G A В A В P A POSITION BOLT G Α A Α В В (LODE 1005.03) Α В G Α P В TURN BOLT G Α P - 5/8 BOLTS (COPE 1005.05) В G Α 8 P MOVE TO ALL BOLTING LOCATIONS A В G Α A В G Δ В G Α P В В G A В Α G R Α G P В Α В Α Α Α B G R Α Α В G В P A Α A G В Α В G В Α В G M X 1 Α G Α Α В M Α 8 G M X I Α G Х G X G х G X 1 Α x R G 1 Α 8 G A B P ABPA BG Α В ABPA BGABP ABPA BGABP ABPA BGABP ABPA G A ВР ABPA BGABP ABPA ABPA ABGABP ABPA BGABP ABPA BGABP A B P A BGABP A B P A ABGABP ABPA ABGABP ABPA 970 2 970 410 1640 10261

MOST - calculation

CODE 3007,01

DATE 6/14/84 SIGN. TLC

ASSEMBLY AREA	1 1
O. METHOD	No. SEQUENCE MODEL FR TMU
JOB PREPARATION	A B G A B P A
	A B G A B P A
(CODE 1001.11)	A B G A B P A
	A B G A B P A
OBTAIN BOLTS FROM	A B G A B P A
EREE STOCK	A B G A B P A
FREE STOCK	A B G A B P A
(CODE 1001.121)	A B G A B P A
	A B G A B P A
FREE STOCK (CODE 1001.121)	A B G A B P A
1	A B G A B P A A R G A E P A
+	A R G A E P A A B G A B P A
	A B G A B P A
	A B G A B P A
	A B G A B P A
	A B G M X I A
	A B G M X I A
I	A B G M X I A
	T A B G W A T A
	A B G M X I A
	A B G M X I A
	A B G M X I A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	A B G A B P A B P A
	1 12050 12, 0
	2 15 417 15, 4

MOST - calculation

CODE

3007.02

DATE 6/14/84

SIGN. TLC

200

SEWAGE PUMP INSTALLATION

PAGE 10-144

ACTIVITY	AREAL	TRAVEL
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		_	_			_
c	o	N	D	ITI	ON	ıs

ASSEMBLY AREA

	HUSEHULT ANEN	,	·		
NO.	METHOD		SEQUENCE MODEL	FR	TMU
1	FROM TOOL BOX TO ASSEMBLY 102	3	A o Bo G O A24 B o P O A 24		480
_1	LAPDER (CODE 1002.19) & RETURN	5	A & B O GO A & B B PO AO		120
_	FROM ASSY 102 LADDER TO 2ND		A B G A B P A		1
4	RATFORM DECKEDGE & RETURN		A B G A B P A		
~	FROM DECK EDGE TO PUMP KOOM NO.1		A B G A B P A		
3_	LAPOER & RETURN		ABGABPA		
11	DESCENO LADDER & ASCEND LADDER	,	A B G A B P A		
4			A B G A B P A		
_	FROM LAOPER TO FOUNDATION		ABGABPA		
5	& RETURN		A B G A B P A		
6	FROM TOOL BOX TO FREE STOCK		A B G A B P A		
0	(CODE 1002.17)		A B G A B P A		
			ABGABPA		
			A B G A B P A		
			A B G A B P A		
			A B G A B P A		
			A B G A B P A		
		2	A B G A B P A	2	330
		2			320
		4	(A B G M X I A C C	(N S	
		4	(A 1 B 0 G 1 M 3) X 0 10 A 6	2/0)2	320
		1	A B G M X I A	14/6	1,000
			A B G M X I A		
····			A B G M X I A		
			A B G M X I A		
			A B G A B P A B P A		
			ABGABP ABPA		
			ABGABP ABPA		
	,		A B G A B P A B P A		
			ABGABP ABPA		
			ABGABP ABPA]	
			ABGABP ABPA		
			A B G A B P A B P A		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			A B G A B P A B P A		
			A B G A B P A B P A		
		1		2	(000
					3,920
		6	1760	-	3,720
	<u> </u>				
TIME	-	•	1	14,	160
	D_1458				

MOST - calculation

3007.03

DATE 4/27/84 SIGN. TLC

SIGN. TLC PAGE 10-145

SEWAGE PUMP INSTALLATION

CONDITIONS ACCEMBIY AREA

	ASSEMBLY AREA											,
NO.	METHOD	NO.	SEC	UEN	CE M	ODE					FR	TMU'
1	2.6 6 50 5 1 1 1 2		<u> </u>	A	В	G	A	В	Р	A		
	RIGGERS LAND SEWAGE	2	╀	Α	8	G	A	8	Р	Α	<u> </u>	<u> </u>
	PUMP AND FOUNDATION ASSEM-	8	┼-	Aı	BG	G,	A			A 2	4	52 24
		1	╁	A3 A	В <u>с</u> В	G _p	(A 3) _{Во} В	P _O	A 3	(4)	<u> </u>
	BLY ON LOCATION			A	В	G	A		· P	A	 	 -:
2				Α	8	G	Α	В	P	Α		
2	NOT USED			Α	В	G	Α	8	Р	Α		
		<u> </u>	-	<u>A</u>	<u>B</u>		<u>A</u>		Р	<u> </u>	<u> </u>	
_		-	┼╌	<u>A</u> _	<u>В</u> В	G	A	<u>8</u>	<u>Р</u> Р	A	 	<u> </u>
3	SET-4P TO REMINE TEMPORARY		\vdash	A	В	G	- A		P	^	 	-
	į			Α	В	G	Α	В	Р	Α		
	BOLTS (CODE 1005.02)	ļ	<u> </u>	A	8	G	A	В	Р	Α		
4	LOOSEN BOLT-4@34"	<u></u>	┼	<u>A</u>	В	G	<u>A</u>		P	<u> </u>		 .
		-	┼	A	<u>B</u>	G G	A	<u>В</u> В	P P	A	 	
	(CODE 1005,04)			A	В	G	A	В	P	A		
_	DEUL 2 - 1 () - 1 - 2 - 2			Α	В	G	М	х	L	Α		
5	REMOVE BOLT (CODE 1005.03)	ļ	_	Α	В	G	M	X	1	Α		
6	LOOSEN BOLT-8@5/8"		-	A	8	G	M M	×	 	A	 	 -
9			-	A	В	G	M	$\frac{\hat{x}}{x}$.	A A	 	
	(CODE 1005.04)			Α	В	G	М	×	1	A		
17	25 Marie 25 - (Α	В	G	М	x	1	Α		
7	REMOVE BOLT (CODE 1005.03)		ļ	A B G	8	G B P	М	<u> </u>	l B P	<u> </u>		
8	REMOVE TEMPORARY MOUNTS					B P				A A	 	
	TRAVEL					3 P			B P			
9	TRAVEL		Α .	B G	A	ВР		A E	3 P	A		,
			Α	ВG	A	3 P		A	3 P	A		
		<u> </u>		3 G					3 P			
			 	3 G		3 P			3 P 3 P			
			+	3 G					3 P			٥.
:				3 G					3 P			-
				3 G				АВ	Р	A		
			——	3 G					Р			ļ
		3	A E	3 G	A	3 P		AE	P			9.
		4	-							770 338	4	95 335
		5	 		···-					110	4	1,640
		6								708	8	566
		7								110	9	3,28-
TIME	26										15,0	3,28- 666

MOST - calculation

CODE 3007.04 DATE 6/14/84 SIGN. TLC

SEWAGE PUMP INSTALLATION

'AGE 10-146

ACTIVITY LAYOUT & DRILL HOLES IN FOUNDATION

CNDITIONS	Δ	ς	ς	F	М	R	1	V	Δ	R	F	Δ
	м	7			IVI	- 13				п		H

	A 3 3 L IVI B L I A	I.			
NO.	METHOD	NO.		FR	TMU
1	MANUFACTURE TEMPLATE		ABGABPA		
	(CODE 1003.30)	1.	A B G A B P A		
2	LAYOUT EACH HOLE		ABGABPA		
۷.	(CODE 1003. Zo)	ļ	A B G A B P A		
3	POSITION DRILL		ABGABPA		
<u> </u>	(CODE 1004.11)		A B G A B P A		
4	USE SAFETY CHAIN		A B G A B P A		
-	(chor 1004.12)	<u> </u>	A B G A B P A A B G A B P A		
5	PLUG IN EXTENSION CORD				
	CCODE 1004.13) CHANGE DRILL BIT	 	A B G A B P A A B G A B P A		
6	(CODE 1004.14)		A B G A B P A A B G A B P A		
	HAND FEED DRILL BIT TO & FROM	 	A B G A B P A		
7	WORK (CODE 1004.15)		A B G A B P A		
	PROCESS TIME		A B G A B P A	-	
8	MATERIAL CODE OO13 (%" DIAQ YY" DEPTH)		ABGABPA		
			A B G A B P A		
			A B G A B P A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		-
			A B G M X I A A B G A B P A B		
			A BGABP ABPA		
			A B G A B P A B P A	1	
			ABGABP ABPA		
\vdash			ABGABP ABPA		
		<u> </u>			
			A B G A B P A B P A		
			A B G A B P A B P A		-
			A B G A B P A B P A		
			ABGABP ABPA		
		8	149	8	1 192
				8	9,888
		2		8	2, 584
		3		8	5,920
		4		8	7. 520°
		5	2960		2 960
		6 7	2400	_	2,400
-			530	8	<u>4.240 </u>
TIME	=			36,	,704

MOST - calculation

3007.05

DATE 6/14/84

IGN. TLC

SEWAGE PUMP INSTALLATION PAGE 10-

ACTIVITY INSTALL PERMANENT MOUNTS

	ASSEMBLY AREA										
NO.	METHOD	NO.	SEQUE							FR	TML
1	RIE CEDE DEMONIC ANNA	1	A	В	G	<u>A</u>	В	Ρ			ļ
<u> </u>	RIGGERS REMOVE PUMP	2	A .		G G	_ <u>A</u>	B	P			
	FROM FOUNDATION	3	A .			A A	8	P			 - -
		8	A -		6 G	,			A A		5
2	NOT USED	-	A	В	<u>6</u> G	A	3)B	<u> </u>		1(3)	2
		 -	A	8	G	A	В	P			
			A	8	G	Α	В	P	' Α		
7	DAWT ALIE		A	В	G	Α	В	P	A		
<u>3</u>	PAINTER PAINTS FOUNDATION		A	В	G	A	В	Р	A		
4	657 110 5 0 0 - 110		A	В	G	Α_	В	Р			<u> </u>
1	SET-UP FOR BOLTING		A	_ <u>B</u>	G	<u>A</u> _	B	P		_	
	(CODE 1005.02)	 	A	<u>8</u> B	G G	<u>А</u> А	В	<u>Р</u> Р			
			A			- <u>^</u>	В			_	+
5	PLACE RESILENT MOUNTIN	-	A		G	A	8	P		_	
			A	В	G	Α	В	P	Α		
	POSITION		А	В	G	Α	В	Р	А		
6	POSITION BOLT-5/811.		A	В	G	M	X	ı	Α		ļ
0	7031 110N BUCI-378	ļ	A	8	G	М	X				ļ
	(CODE 1005.03)	 -	A	В	G	М	<u> </u>	_ !			<u> </u>
		-	A	<u>B</u>	G	M	×				
フ	POSITION BOLT-3/4"		A		G		$\frac{x}{x}$	<u>;</u>		+	
			A	В	G	М	×	1	A	-	
1	(CODE 1005.03)		А	В	G	М	х	ı	А		
8	TRAVEL		А В С	Α	ВР		Α	В	PA		
0			ABG	Α	ВР		A	В	РА		
			АВО		ВР		A	В	PA		
			A B G		ВР		<u>A</u>	8	PA		} -
		 	A B G	A	B P		<u>A</u>	8	P A		 -
			A B G			, .			PA		
			A B G				А	В	PA		
			A B G	Α	ВР		Α	В	РА		
			A B G	Α	ВР		Α	В	РΑ		
			A B G	_					РА		
			A B G						PA		
			A B G	A	8 P		A	В	PA	-	<u> </u>
		4							970		9
		6							<u>410</u> 410	8	3,28
		7							710	17	1 1,64
			<u> </u>								
ئــــــ	#	L	<u> </u>							1	650

MOST - calculation

3007.06

DATE 6/14/84

SIGN. 7LC PAGE 10-148

SEWAGE PUMP INSTALLATION

	SEWAGE PUMP INS		
ACTIV	TINSTALL SELF LOCKING	, F	FASTNER (
COND	ASSEMBLY AREA	<u>-</u>	
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
	RIGGER PLACE UNIT ON	5	A3 B6 G (A3) B 6 P A3 (4) 240
1		1	A B G A B P A 0
	FOUNDATION		A B G A B P A A B G A B P A
	DEDOCITION DOLTS		A B G A B P A
2	REPOSITION BOLTS		A B G A B P A
	(CODE 105.03)		A B G A B P A
3	INSTALL SELF LOCKING		A B G A B P A
	NuTS 5/8" (CODE 1005.05)		A B G A B P A A B G A B P A
	,		A B G A B P A
4	INSTALL SELF LK. NuTS ¾"(1005.05)		ABGABPA
5	MOVE BETWEEN BOLTING		A B G A B P A
3			A B G A B P A A B G A B P A
	LOCATIONS		A B G A B P A
			A B G M X I A
			A B G M X I A A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G A B P A B P A
			A B G A B P A B P A
	-		A B G A B P A R P A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A B P A
Į	<u> </u>	i	A B G A B P A B P A
		2	410 1 2 4920
		3	1026 8 8208
		4	1215 4 4860
TIME	=		18,228

MOST - calculation

CODE

3008 DATE 8 - 2 4 - 8 4

SIGN. F WM

4 4 0

11,445

11,4 5

71, 803

ACTI	JOB PREPARATION				
CON	DITIONS				_
	WETDOCK AREA				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	ΤM
			AB GABP A		_
1	AVERAGE INITIAL JOB		A B G A B P A		_
	AVENAGE INITIAE GOB		AB GABP A		_
	PREPARATION (CODE 1001.12)	•	AB GABP A		
	(A BGABP A		_
2	AVERAGE ADDITIONAL JOB *		AB GABP A		
			ABGABPA		
	PREPARATION (CODE 1001.22)		AR GABP A		
			AB GABP A		
3	GET OR RETURN TOOLS TO		AB GABP A		
			AB GABP A		
	TOOL BOX (CODE 1001. 111)		AB GABP A		
			A B G A B P A		
4	SECURE PARTS FROM		AB GABP A		
			AB GABP A		
	WAREHOUSE (CODE 1001.132)		AB GABP A		
			A B G A B P A		
			A B G A B P A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A A B G M X I A		
			A B G M X I A		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA	 	
			ABGABP ABPA	 	_
			ABGABP ABPA		_
			ABGABP ABPA		_
			ABGABP ABPA		_
			ABGABP ABPA		_
			ABGABP ABPA		_
			ABGABP ABPA	 	_
			ABGABP ABPA	 	_
			ABGABP ABPA		_
			ABGABP ABPA	 	_
			ABGABP ABPA		_
		1	42 001	4	12
		2	16,597		16
			<u> </u>	-	.

TIME =

MOST - calculation

CODE 3008.02

DATE 8 - 2 4 - 8 4

SIGN. F WM

BRIDGE CRANE AND RAILS INSTALLATION

PAGE 10-150

	BRIDGE CRANE AND RAILS	INS.	TALLATION PAGE 10-150
ACTIV	/ITY AREA TRAVEL		
COND	TIONS WETDOCK AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
			ABGABPA
1	FROM TOOL BOX TO TOOL ROOM		A B G A B P A
	OR RETURN (450FT)	<u> </u>	A B G A B P A A B G A B P A
	OR RETURN (430FT)		A B G A B P A A B G A B P A
2	FROM TOOL BOX TO STAIRS,		A B G A B P A
			ABGABPA
	OI LEVEL MIDSHIPS (350 FT)		A B G A B P A
0	FORM CTAINS TO COARSOLTING	 -	ABGABPA
3	FROM STAIRS TO SCAFFOLDING		A B G A B P A A B G A B P A
	ABOVE HANGER DECK OR		A B G A B P A
			A B G A B P A
	RETURN (388 FT)		A B G A B P A
ונ	O-1-10 O-10		A B G A B P A
4	FROM STAIRS TO FREE STOCK		A B G A B P A A B G A B P A
	OR RETURN (300 FT)		A B G A B P A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A A A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G A B P A B P A
			A B G A B B A B B A
			A B G A B P A B P A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
ļ			A B G A B P A B P A
			A B G A B P A B P A B G A B P A B P A
,			A B P A
			A B G A B P A B P A
			A B G A B P A B P A
		1_	3300 2 6600
		<u>2</u> 3	2450 4 9800 2700 6 14 300
		4	2700 6 /6,200 2200 2 4400
TIME		•	
	- // R-1458		37,000

MOST - calculation

3008.

DATE 8-24SIGN. FWM

BRIDGE CRANE AND RAILS INSTALLATION

PAGE 10-151

ACTIVITY

LAYOUT CENTERLINE

NO.	METHOD	NO.	SEQUENC	CE M	ODEL					FR
VU.	I WE THOU	4	A				B12	P _C	AO	2
1	MEASURE FROM ENDS OF BEAM	7				Α,				(2)
	TYLEASURE FROM CITY OF SELECT	8				(A,				(4)
2	MARK MEASUREMENTS		А	В	G	Α	В	Р	Α	
			А	В	G	A	В	Р	Α	
3	PULL OUT CHALKLINE		Α	8	G	Α	8	Р	Α	
			A	8	G	Α	В	Р	Α	_
4	PLACE CHALKLINE		A	В	G	A	В	P	Α	
		<u> </u>	Α	8	G	<u>A</u>	В	P		<u> </u>
<u>5</u>	SNAP CHALKLINE		A	B	G	<u> </u>	<u>B</u>	<u>P</u>		-
,		<u> </u>	A .	В	G	<u> </u>	B B	P		
6	REWIND CHALKLINE	<u> </u>	A	B	G	A A	В	P		_
7	GET & RETURN HAMMER & PUNCH		A	8	G	A	8	P		
	GELT KEIVKN HAMIYLEK I FUNCH		A	В	G	Ā	В	P	A	
8	PLACE PUNCH ON MARKS		A	8	G	A	В	P	A	
<u> </u>	THEE FUNCE ON WARKS		А	В	G	Α	В	Р	Α	
9	CENTER PUNCH MARKS		А	В	G	Α	В	Р	Α	
		3	(A ₁	Во	G	м3)	Χo	10	Aa	12
10	INSPECT MARKS	5	Α,	Во	G,	м,	Χo	10	Ao	2
		6	A	B 0	G/	M//3	X0	10	Aο	2
		<u> </u>	A	В	G	M	X	1	<u>A</u>	
			A	<u>B</u>	G	M	<u> </u>	1		_
			A	B	G	M	×	1		<u> </u>
		<u> </u>	A	8 B	G	M	X	<u>;</u>		_
		-								(2)
		2	A ₁ B _O G ₁							(2)
		9	A _O B _O G						A A A A A A A A A A A A A A A A A A A	(4)
			A BoG			7				(4)1
			ABG					3 P		
			A B G	A	3 P			3 P	_	
			A B G				A E			
			ABG	A	3 P		A E	3 P	A	
		<u> </u>	A B G					P P		
			ABG					3 P		
		<u> </u>	ABG					P		<u> </u>
		 	A B G					P		
			A B G					3 P		
		 			- r					
			<u> </u>							<u> </u>
			 	·						
										

MOST - calculation

3008.04 DATE 8-24-84

l 2000	bunung								SIGN.	F	WA	1	
		BRIDGE CRANE AND RAIL	SIN	STA	LLA	TI	No		PAGE	14	7-15	2	
ACTIV	LA	YOUT & DRILL BEAM						_					
CONDI		ETDOCK AREA											
NO.	METHOD	I DOCK AREA	NO.	SEQ	JEN	CE N	ODEL					FR	TMU
			7	1	A _O	Вс	GO	A/6	B52	Pο	Ao	4	1920
	LAYDO	T TO DRILL WITH TEMPLATE			A	В	G	Α	В	Р	Α		
					A	В	G	<u>A</u>	В	P	Α .	ļ	
	(COD	E 1003.70)	 	+	<u>A</u>	B B	G	A	B	P P	A		<u> </u>
2	PINGI	N EXTENSION (CODE 1004.13)	 	 	<u>^</u>	В	G		В	P	_		
			L		A	8	G	Α	В	Р	Α		
3	CHANG	E DRILL BITS (CODE 1004.14)		+	A	В	G	Α	В	P	Α		
4	. () . ()	CONTROL SIT TO & COMM	 	 	<u> </u>	В		<u>A</u>	В	P	<u>A</u>	-	
4	HANDE	EED DRILL BIT TO & FROM	-	 	<u>A</u>	B	G	A	B	P P	A	 	
	WORK	PIECE (CODE 1004,21)			<u>-</u> А	В	G	A	В	P	A	<u> </u>	
					A	В	G	Α	В	Р	Α		
5	PROCES	S TIME TO DRILL 1/8" DIA.		-	Α	В	G	Α	В	Р	A		
	11010	in the decorption cope		 	<u> </u>	В	G	<u> </u>	<u>B</u>	P	<u>A</u>		
		MAT'L & CONDITION CODE		1	<u>A</u> A	B	G	A	B B	P P	A		
]	0187	@ 1" DEPTH)		 	A	В		A	В	P	A		
					A	В	G	М	X	1	Α		
6	PROCE	SS TIME TO DRILL 21/32"			Α	В	G	M	X	1	Α		
	DIA. F	IOLE (MAT'L & CONDITION		 	A A	B B	G G	M M	x x	1	A		
				}	A	В	G	М	X	1	A		
ļ	CODE	0187 @1"DEPTH)	<u> </u>	 	A A	8 8	G	M	X	1	<u> </u>		
7	14 OV F	WITH EQUIP TO EACH		-	^ _	В	G	M	$\frac{x}{x}$	÷	A		
-	771012			А В	G	Α	ВР	-	A E	3 P	A		
	LOCAT	ION		А В	G	Α	вР		A E	P	Α		
							ВР	,		3 P			
				A B			······································			P			
				A B						P			
				А В	G	Α	вР		A E	P	A		
				А В						P			
				A B						P			
	<u> </u>			A B						P			
				АВ						P			
			i							32.		48	15,504
			2	<u> </u>						960			2960
			3							40		4	9600
			5	-		······		. 		75		48	10560 3600
			6						1	00			4800
TIME	*												,944
<u></u>											l	, 0	1 1 1 1

MOST - calculation

CODE

3008. 05

DATE

8-24-84

BRIDGE CRANE AND RAILS INSTALLATION PAGE 10-153

ACTIVITY

WELD GUIDE TABS IN PLACE

o.	WET DOCK AREA	NO.	SEQUENCE MODEL	FR	TML
_		3	A 6 B 6 G 3 A 6 B 16 P , AO		38
	MEASURE FROM PIVOT BLOCKS	4	A / B O G , A / B O P 3 A O		4
		5	A, B, G, A, B, P3 A,	2	14
	MARK PLACEMENT FOR TABS	6	A, Bo G, A, Bo P, Ao		16
•	A	9	A / B O G / A / B O P / A O	3	12
_	GET WELDING EQUIP	10	A B G A B P A	 	2
ı	PLACE SHIELD	-	A B G A B P A	 	-
	PLACE SHIELD	-	A B G A B P A	 -	
	PLACE GLOVES	-	ABGABPA	1	
	TERES GEOVES	1	A B G A B P A		
	GET & ASIDE HANDLE		A B G A B P A		
			A B G A B P A		
	CLOSE & OPEN SHIELD		A B G A B P A	1	<u> </u>
			A B G A B P A	 	
	WELD TAB TO BEAM	+	A B G A B P A	 	
	REMOVE SHIELD & GLOVES		A B G A B P A	-	-
_	KEINONE SHIEFT & GLOVES	7	A B G A B P A (A, B, G, M,)X, I, A	(z) 8	41
	RETURN WELDING EQUIP	8	(A, B, G, M, X, 7) 0 AO	(z)4	
_	LELOWI WILDING COOL	1 -	A B G M X I A	(-).	
			A B G M X I A		
			A B G M X I A		
			A B G M X 1 A		<u> </u>
			A B G M X I A	-	<u> </u>
_		+	A B G M X I A	1/30	00
		2	A B G A B B A B A B A B A B A B A B A B		320
_		+-	A B G A B P A B P A	1412	48
		-	A B G-A B P A-B P A	†	
		1	A B G A B P A B P A	 	
			A B G A B P A B P A		
			ABGABP ABPA		
			A B G A B P A B P A	<u> </u>	
			ABGABP ABPA	<u> </u>	
			ABGABP ABPA	 	
		-	A B G A B P A B P A B P A	 	
_			ABGABP ABPA		
			ABGABP ABPA		-
_				 	
				†	
_		 	·	1	-

MOST - calculation

3008.06
DATE 8-24-84

SIGN. FWM

BRIDGECANE AND RAILS INSTALLATION

PAGE 10-154

ACTIVITY	_	_		
	POSITION	RAIL.	LAYOUT &	MEASURE

CONDI	rions WETDOCK AREA				
NO.	METHOOD	NO.	SEQUENCE MODEL	FR	TMU
		1	ABGA ABPA		
1 .	RIGGER HANG CHAIN FAILS	4	(A, Bo G3 A, Bo P6 Ao	(z)4	880
		9	A, Bo G3 (A, Bo P2 A,)	1214	560
2	SLIDE RAIL ALONG PLATFORM		A B G A B P A		
			A B G A B P A		
3	PICK UP ONE END		ABGABPA		
	,		ABGABPA		
4	PLACE SLINGS UNDER RAIL		A B G A B P A		
			A B G A B P A		
5	LIFT WITH CHAIN FALL		A B G A B P A		
	Davis Asia asima		A B G A B P A		
6_	ROLL RAIL OVER	 	A B G A B P A A B G A B P A		
7	LIFT RAIL TO POSITION	 -	A B G A B P A		
	LIFT RAIL TO POSITION		A B G A B P A		
8	ADJUST LENGTH WISE		A B G A B P A		
-	ADJUST LENGTH WISE		A B G A B P A		
9	PLACE WEDGES	 	ABGABPA		
	· chez - 1, 22 g = 2	2	A 1 B24 G3 M6 X0 10 A0	4	1360
10	DRIVE WEDGES	3	(A1 B16 G3 M3) XO 10 A0		
		5			6200
11	MEASURE POSITION	6	A3 B6 G3 M3 Xo Io Ao	4	600
		7			1720
12	PULL TIGHT	8		(2)4	
		12		(2)4	440
13	MARK HOLES ON RAILS	17	A3 B0 (G1 M3) X0 10 A0		
		_	(A / Bo G3 A / Bo P, Fio A Bo P Ao)		
14	MEASURE FOR PAD THICKNESS		A, BoG, A, B, P, M, A, B, P, Ao	2	440
	Office of the Authors		A B G A (B A R A R A R A R A R A R A R A R A R A		
15	RECORD THICKNESS	7	A I BOGI AO (BILP, A LM32A, BOP, AO		
1/	MEASURE DISTANCE BETWEEN RAILS				1600 3340
1.6	MEASURE DISTANCE BETWEEN RAILS		ABGABP ABPA	161	20 10
17	LOWER RAIL	1	ABGABP ABPA		
			ABGABP ABPA		
<u> </u>			A B G A B P A B P A		
[ABGABP ABPA		
<u> </u>			A B G A B P A B P A		
			A B G A B P A B P A		
<u> </u>			ABGABP ABPA		
 		<u> </u>	1		
l 		<u> </u>		L	1
TIME	=			42	,620
I					, 520

MOST - calculation

CODE 3 0 0 8 .

DATE 8-24-84

RIDGE CRANE AND RAILS INSTALLATION

SIGN. FWM PAGE 10-155

	BRIDGE CRANE AND RAILS INSTALLATION PAGE I					155
ACTI	VITY LAYOUT & DRILL RAIL					
COND	ITIONS WETDOCK AREA					
NO.	METHOD	NO.	SEQUENCE MODEL		FR	TMU
		7	AO BO GO A/G	BJZ Po Ao	4	1920
1	LAYOUT TO DRILL WITH TEMPLATE		A B G A	в Р А		
			A B G A	в Р А		
	(CODE 1003.20)	<u> </u>	A B G A	B P A		<u> </u>
_			A B G A	ВРА	<u> </u>	Ļ
2	PLUG IN EXTENSION (CODE 1004.13)	 	A B G A	B P A	——	ļ
_			A B G A	B P A	 -	ļ
3_	CHANGE DRILL BIT (CODE 1004.14)	ļ	A B G A	B P A	 	
.1		<u> </u>	A B G A	B P A	\vdash	
4	HANDFEED DRILL BIT TO \$ FROM		A B G A	B P A	┼──	<u> </u>
	WARRANCE CODE LODG 21		A B G A	B P A	├	
	WORKPIECE (CODE 1004.21)	 	A B G A	B P A	 	
5	PROCESS TIME TO DRILL 1/8" DIA		A B G A	в Р А	 	
	TRUCESS THATE TO DICTEE . 8 DIA		A B G A	B P A	 	 -
	HOLE (MAT'L & COND CODE ODI3		A B G A	в Р А		-
	MOLE (MIN) E POND CODE CODE		A B G A	B P A		
į	@ 1/2" DEPTH)		A B G A	в Р А		
			A B G M	ХіА		
6	PROCESS TIME TO DRILL 3/"DIA		A B G M X	(I A		_
			A B G M X	(I A		
	HOLE (MAT'L &COND CODE 0013		A B G M X			
	Q 1/11		A B G M X			
	@ ½" DEPTH)		A B G M >			
-	MONE HITTH BOHTD TO BACH		A B G M)			
7	MOVE WITH EQUIP TO EACH		A B G M	X I A A B P A		
	LOCATION			ABPA		
	LOCATION		A B G A B P	ABPA	├──	
			ABGABP			
			ABGABP	A B P A A B P A	_	
			ABGABP	ABPA		
			ABGABP	АВРА		
			ABGABp	АВРА		
			ABGABP	АВРА		
			ABGABP	АВРА		
			ABGABP	АВРА		
			ABGABP	ABPA		
		. 1		(323)	(24)z	<u>15.504</u>
		2		2960	2	592
		3		(2400)	(2)Z	9600

5

TIME =

61,21'

MOST - calculation

3008.084
DATE 8.24.84

45,376

DATE 8-24-84
SIGN. F W M

BRIDGE CRANE AND RAILS INSTALLATION

PAGE 10-156

ACTIV	ITY AMOUNT ADOLL DADS	<u> </u>	
COND	LAYOUT & DRILL PADS		
	WETDOCK AREA		
NO.	METHOD	NO.	SEQUENCE MODEL FR TMU
			A B G A B P A
1	LAYOUT TO DRILL WITH TEMPLATE		A B G A B P A
	(<u> </u>	A B G A B P A
	(CODE 1003.20)		A B G A B P A
2	PLUG IN EXTENSION (CODE 1004.13)		A B G A B P A
	TENG IN EXTENSION (COPE TOO 1818)		A B G A B P A
3	CHANGE DRILL BIT (CODE 1004.14)		A B G A B P A
			A B G A B P A
4	HANDFEED DRILL BIT TO FROM		A B G A B P A
	1 1 0 0 0 0 0 CO CO CO CO CO CO CO CO CO CO CO CO CO		A B G A B P A A B G A B P A
	WORK PIECE (CODE 1004.21)	 	A B G A B P A A B G A B P A
5	PROCESS TIME TO DRILL Y8" DIA	 	A B G A B P A
	TICOCCOS TITAL TO DICTOL TO DITTOL		A B G A B P A
	HOLE (MAT'L & COND CODE 0187		A B G A B P A
			A B G A B P A
	@ 3/8 " DEPTH)		A B G A B P A
,	3/117.	<u> </u>	A B G M X I A
ی	PROCESS TIME TO DRILL 34" DIA		A B G M X I A
	HOLE (MAT'L & COND CODE 0187		A B G M X I A
	@ 3/8 " DEPTH)	 	A B G M X I A
	e 18 DEP(H)	<u> </u>	A B G M X I A
			A B G M X I A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
			AB GABP ABPA
			A B G A B B A B B A
		ı	ABGABP ABPA
		2	(323) (24) 2 15,504 2960 2 5920
		3	(2400) (2)2 9600
_)) (48)= 10,560
		5	(30) (24)2 1440
		6	(49) (24)2 2352

MOST - calculation

CODE

3008.09

87,894

DATE 8-24-84

SIGN. FWM

BRIDGE CRANE AND RAILS INSTALLATION PAGE 10-157

ACTIVITY REPOSITION RAIL CONDITIONS WETDOCK AREA TML SEQUENCE MODEL NO. METHOD NO. Bo P3 A/) (2)4 720 A, B, G, A, Bo P6 108 1 LIFT WITH CHAINFALL 8 A, B, G, B 0 G/ A, B0 P/ A0) (2)4 14 325 ROLL RAIL OVER G P G В 3 LIFT RAIL TO POSITION В G В Α Α 8 G 8 A В Α G В ADJUST LENGTHWISE P G Α 5 PLACE WEDGES G Α В Α G Α DRIVE WEDGES Α G В A В Α Α 8 G Α В G Α MEASURE POSITION В G Α PLACE PADS В G Α В В G Α Α SET UP TO BOLT (CODE 1005, 02) G 6200 M3) X0 10 (30)4 B32 G1 Ao 10 POSITION BOLT (CODE 1005, 03) 2 A3 B6 G3 M3 X0 10 Ao 600 3 M3) X 0 10 (10)4 A3 B0 (G/ Ao 172 (2)4 4 PULL TIGHT A3 B6 G3 M3 X0 16 A0 // A3 B0 (G, M3) Xo lo 440 TURN BOLT 5/8" (CODE 1005.04) 12 Α M Α 8 G X x 1 G M G M Х ŧ 13 RELEASE WEDGES (A, B, G, A, B, P, A, B, P, A,) (4)4 288 (A, BoG, A, B,OP, M/6 A, BOP, AO) (2) 4 RETRIEVE WEDGES 14 256 [A, BoG, A, BoP, F10] A, BoP, Ao (2)4 1080 MEASURE FOR LEVEL & SPACING A, BOG, A (B6 P, A, M) A, BO P, AO (11) 3 13,981 ABGABP ABPA ABGABP ABPA ABPA ABGABP ABGABP ABPA ABGABP ABPA ABGABP ABPA ABPA BGABP ABGABP ABPA ABGABP ABPA ABGABP ABPA 9 970 (410) (2) 24 19,680 10 (708) (2)24 33,98 . 12

MOST - calculation

CODE 3008.10 8-24-84 DATE

(410)(2)24 19,680

(410)(2)24 19,680

708)(2)24 33,984

226,548

SIGN. FWM

BRIDGE CRANE AND RAILS INSTALLATION

PAGE 10-158

ACTIVITY				
	POSITION.	WELD .	쉭	PAINT

ACTIV	POSITION, WELD, & PAINT					
COND	ITIONS WETDOCK AREA					•
NO.	METHOD	NO.	SEQUENCE MODEL		FR	TMU
		7	Agy BG G, Agy	Bo P, Ao	2	3400
i	SET UP TO UNBOLT RAIL	14	A, Bo G, A,		6	240
		11	A , B , G , A ,		2	120
	(CODE 1005.02)	12	A / B o G / A /		4	280
_	- F/09/	15	A 6 B 6 G 3 A 6	B/6 P, AO		380
2	TURN BOLT 5/8" (CODE 1005.04)			Bo P. Ao	2	80
3	DEMANUE ROLF (ADDE 1005 AZ)	18	A B G A	B _{/6} P _/ A _O	-	270
<u> </u>	REMOVE BOLT (CODE 1005.03)	-	A B G A	B P A	-	
4	LOWER RAIL		A B G A		+	
	LOWER RAIC	 	A B G A	B P A	 	
ح	POSITION BOLT (CODE 1005.03)		A B G A	B P A	+	
<u> </u>	1001110/4 0021 (COD2 (003.00)		A B G A	ВРА		-
6	TURN BOLT 5/8" (CODE 1005.04)		ABGA	в Р А	 	
			A B G A	в Р А		
7	BORROWOR RETURN AIR LINE		A B G A	вра		
			A B G A	в Р А		
8	ATTACH OR DETACH GRINDER		A B G A	в Р А		
_		4	A3 B32(G1 Mg)			
9	GRIND OFF TABS	9	(A, Bo G, M,			
		10	A, BoG, M,	X3001 0 AO		36,360
10	GRIND WELD PREP	13		XO IO AO		1920
	CANA CHIEF CANA OF ME	17		$\frac{(X_{/73})I_O}{X}$ I A	(52)/2	52,680
11_	PLACE SHIELD GRIND OR WELD	-	A B G M		 	
12	PLACE GLOVES GRIND OR WELD		A B G M	X I A	-	
12	PLACE GENES GRIND OR WELD	8	A3 B6 G1 A3 B0 P3 F16		2	1110
13	OPEN OR CLOSE SHIELD	<u> </u>	ABGABP	ABPA	-	640
<u></u>	OPEN DIL CEOSE SHIEED	 	ABGABP	АВРА		
	GRIND OR WELD		ABGABP	АВРА		
			ABGABP	АВРА		
14	REMOVE SHIELD OR GLOVES		ABGABP	ABPA		
	_	<u> </u>	ABGABP	ABPA		
	GRIND OR WELD	<u> </u>	ABGABP	ABPA	ļ	
_			ABGABP	ABPA		
<u>15</u>	GET WELDING EQUIP		ABGABP	ABPA		
	act dasine in the		ABGABP	ABPA		
16	GET SASIDE HANDLE		ABGABP	ABPA	ļ	
١7.	WELD PADS		ABGABP	A B P A	 	076
./_	MOCD LMDD	1		970	12/21	970 33,984
	05710-1-14-5-14-50-0	2		(708)	(6)24	10,787

<u>2</u> 3

5

RETURN WELDING EQUIP

18

MOST - calculation

CODE

3008.11 DATE 8-24-84

SIGN. FWM

410

420

8

34,7c-

	BRIDGE CRANE AND RAILS	INST	ALLATION	PAGE 10-15	9	
ACTIV	ITY					
CONDI	INSTALL STOPS			· · · · · · · · · · · · · · · · · · ·		
	WETDOCK AREA					
NO.	METHOD	NO.	SEQUENCE MODEL		FR	TMU
		4	A B G A	B P A		0
1	SET UPTO UNBOLT (CODE 1005.02)	13	A 0 B 0 G 0 A/6	832 PO AO	8	384
	5/_11		A B G A	в Р А	1	
2	TURN BOLT 5/8" (CODE 1005.04)		A B G A	B P A		 .
,			A B G A	B P A	ļ	- :
3	REMOVE BOLT (CODE 1005.03)		A B G A	B P A	1	-
4	SEAMAS CAMITED PAINT DADS		A B G A	B P A		
-4	SERVICE PAINTER PAINT PADS		A B G A	B P A		
5	LAYOUT TO DRILL WITHOUT		A 8 G A	B P A		
	LA 1001 TO DETEC WITHOUT		A B G A	в Р А		
	TEMPLATE (CODE 1003.10)		A B G A	в Р А		
			A B G A	ВРА		
6	PLUG IN EXTENSION (CODE 1004.13)		A B G A	B P A		<u> </u>
ļ			A B G A	B P A		
7	CHANGE DRILL BITS (CODE 1004.14)		A B G A	B P A		
ا م	and the same of the same		A B G A	B P A	<u> </u>	
8	HANDFEED DRILL BIT TO & FROM		A B G A	B P A	├─	. '
	140 040 FOE (0005 1004 21)		A B G M	XIA		
	WORKPIECE (CODE 1004.21)		A B G M	XIA		· ·
9	PROCESS TIME TO DRILL 14" DIA		A B G M	X I A		
	TRACESS TIME TO DICICE TO		A B G M	X I A	<u> </u>	
	HOLE (MAT'L & CONDITION CODE		A B G M	X I A		
			A B G M	X I A		
	0013 @ 1/2" DEPTH)		A B G M	X I A	L	
-			ABGABP	ABPA	<u> </u>	ļ
10	SET UP TO BOLT STOP (LODE 1005.02)		ABGABP	ABPA	ļ	
	() ()		ABGABP	ABPA		 ,
11.	POSITION BOLT (CODE 1005.03)		ABGABP	ABPA	 	
12	TURN BOLT 1/4" (CODE 1005.05)		A B G A B P	ABPA	-	4-7
١٢	[URN BUC! /+ (WDE 1003:03)		ABGABP	ABPA	<u> </u>	-
13	MOVE WITH EQUIP TO EACH	1		970	-	97
	1,1010	Z				33,984
	LOCATION	3		(410)	(z)24	19.68
		5		1390	8	11 12
		6		2960		2960
		7		2400		2400
		8	<u> </u>	110	8	88
		9		157	8_	1256
		10	l	970	į	970

11

12

MOST - calculation

CODE <u> 3008.12</u> 8-24-84 DATE SIGN. FWM

BRIDGE CRANE AND RAILS INSTALLATION

10-160 PAGE

ACTIV	INSTALL BRIDGE CRANE		INSTAL	<u>LM.</u>	1014				10	760	
COND	TIONS										
NO.	METDOCK AREA	Luc	lecour	IOF N	1005						
NO.	METHOD	No.	SEQUEN	B	G	A	8	P	A	FR	TMU
1	RAISE RAIL	8	A				- <u>B</u> -	P	$\frac{\Delta}{A}$	+	10
		111	A	В	G	A	В	P	<u> </u>	-	0
2	ADJUST LENGTHWISE	16	Α	В	G	A	В	P	A	 	10
•	_	12	A	Bo	G	A	Во	P6	A	2	200
3	SET UP TO BOLT (CODE 1005.01)	13		Bo		A		Р3	Aο	2	120
4	On a smile I Bas B. Jana B. Langer	14			G		Bo	_	A ₁	2	140
4	POSITION BOLT (CODE 1005.03)	16		<u>B</u>	G	Α_	В	P	<u>A</u>	 	10
5	TURN BOLT 5/8"(CODE 1005.07)	20					B32		٥^	4	1920
	TORN BOLL 78 ((ODE 1003.87)	-	A	B	G G	_ <u>A</u> _	<u>B</u>	<u>P</u>	<u> </u>	 	
6	MEASURE FOR LEVEL & SPACING		A	- <u>B</u>	G	A A	B	P P	A	 	
	MENORAL OF CENCE OF MENOR	 	A	B	G	A	В	P	$\frac{\gamma}{A}$	+	
7	CARPENTERS OPEN SCAFFOLDING		A	В	G	A	В	P	A	_	
			А	В	G	A	В	P	Α		
8	RIGGERS POSITION BRIDGE CRANE		А	В	G	Α	В	Р	A		
		<u></u>	Α	В	G	Α	В	P	Α		
9	ROTATE COGS TO ALIGN	 _	Α_	В	G	A	8	Р	Α		
	016:1 0 4 4	1	A ₃			M ₃)	X٥	10	Ao	(40)2	
10	PUSH BRIDGE ONTO RAILS	9	A 3		G 5	M 3		13	Ao	2	360
11	RIGGERS POSITION CROSS RAIL	10	A/			M,	× _o	<u> </u>	Aa	2	80
	RINGERS TOSTITON CROSS RAIL	10	A A	<u>В</u> 0	G3 G	<u>М.з</u> М	χ _ο χ	10	A _O		70
12	INSERT HINGE PINS		A	В	G	M	$\frac{x}{x}$	1	- <u>``</u>	 	
			A	В	G	м	×	1	A		
13	PLACE WASHERS		Α	В	G	М	x	1	A		
		6	A B G	A ₂ (B 6 P/	43Mz	ZA,E	30 P	Ao	(15)	6340
14	INSERT COTTER PINS	15	A B G	3 A1 (30 Ps	C6)	A, E	0 P/	Ao	(4)	430
	.	<u> </u>	A B G		ВР		A E	3 P	Α		
15	BEND ENDS		ABG				A B	P	A		
1/	RIGGERS POSITION HOIST		A B G					P			
-16-	RIGGERS FOSTITON HOIST		A B G					P			
17	SET UP TO BOLT (CODE 1005.02)		ABG					Р			
	, , , , , , , , , , , , , , , , , , , ,		A B G					P			
18	POSITION BOLTS (CODE 1005.03)		A B G					P			
			A B G	_				P			
19	TURN BOLT 1/2" (CODE 1005,05)		A B G	A E	3 P		АВ	Ρ.	A		
2	AANUG LUITUL GAMA - TANI	3							860		860
20	MOVE WITH EQUIP TO EACH	4									11,480
I	l materia I	5					(20	<u>52)</u>	(2)14	57,456
	LOCATION	17							70		970
		18	ļ						10		3280
		19	L						310	8	6480
TIME :										94.	086
FORM	R-1458										

MOST - calculation

CODE 3008.13 DATE

65,280

SIGN. <u>FWM</u>

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	BRIDGE CRANE AND RAILS	INST	ALLATION	PAGE 10-1	6/_	
ACTIV	VITY					
יחאס	FINAL INSTALL RAIL			······································		
0.101	WET DOCK AREA					
10.	METHOD	NO.	SEQUENCE MODEL	· · · · · · · · · · · · · · · · · · ·	FR	TN
		7	A, BO G, A,	Bo Pr Ap	6	36
1	RAISE RAIL	9	A B G G A/		8	38
			A B G A	В Р А		
2_	ADJUST LENGTH WISE		A B G A	B P A		
			A B G A	в Р А		
3	SET UP TO BOLT (CODE 1005.01)		ABGA	B P A		
,	/		A B G A	B P A	<u> </u>	
4	POSITION BOLT (CODE 1005.03)		A B G A	B P A		
_	5/3" (= 1005 07)		A B G A	в Р А	<u> </u>	
<u>5</u>	TURN BOLT 5/8" (CODE 1005.07)		A B G A	B P A		
6	MEASURE FOR LEVEL & SPACING	 -	A B G A	B P A		
<u>_</u>	MEASURE FOR LEVEL 7 STACING		A B G A	B P A		-
7	PLACE LINKS & RIVETS	<u> </u>	A B G A	в Р А		
1	PORCE CHIVED I NIVE (5		A B G A	в Р А		
8	HAMMER RIVETS		A B G A	в Р А		
<u>~</u>	111111111111111111111111111111111111111		ABGA	в Р А		
9	MOVE WITH EQUIP TO EACH.		A B G A	врА		
		1	A3 B32(G, M3) Xo 10 Ao	(40)z	3°.
	LOCATION	2	A3 B6 G3 M3	X0 13 A0	2	3
			A B G M	A I X		
			A B G M	X I A		
		<u> </u>	A B G M	X I A		
		 	A B G M	X 1 A		
			A B G M	XIA		
		6	A, B, G, A, B, P, A3M		(15)	63
		8	A, BoG3 A (B3 P, A, F		(4)	3
		<u> </u>	ABGABP	ABPA		
			ABGABP	АВРА		
_			ABGABP	ABPA		
			ABGABP	ABPA		
			ABGABP	ABPA		
			ABGABP	ABPA	<u> </u>	
			ABGABP	ABPA		
			ABGABP	ABPA		
			ABGABP	ABPA		
			ABGABP	ABPA		
			A B G A B P	ABPA		
			ABGABP	ABPA		
		3		(410)	12/10	821
		4		(2052)		
		5		160261	ر ۱۷	##

MOST - calculation

CODE

3009.01 8-27-84 DATE SIGN. FWM

10-16-7

	CONVECTION OVEN INS	TALL	_ATION
ACTIV	JOB PREPARATION		
COND	TIONS		
NO	WET DOCK AREA	No.	SEQUENCE MODEL FR TMU
NO.	IMETHOD	140.	A B G A B P A
1	SIMPLE INITIAL JOB PREPARATION		A B G A B P A
	OIMI EE IMITAE SOBTILET ARATION		A B G A B P A
	(CODE 1001.11)		A B G A B P A
_			A B G A B P A
2	SECURE TOOLS FROM TOOL CRIB		A B G A B P A A B G A B P A
	or return (CODE1001.121)		A B G A B P A
	OR RETORN (CODDITION:121)		A B G A B P A
			A B G A B P A
			A B G A B P A
		-	A B G A B P A A B G A B P A
			A B G A B P A
			A B G A B P A
			A B G A B P A
			A B G A B P A
			A B G A B P A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			A E G M X I A A B G A B P A B P A
			A B G A B P A B P A B G A B P A B P A
			ABGABP ABPA
			ABGABP ABPA
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A B G A B P A
		1	A B G A B P A B P A
			A B G A B P A B P A
		1	A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
		1	12 050 12 05
		2	15 417 2 3083
TIME		1	.!
TIME	=		42,88

MOST - calculation

CODE

3009.02

DATE 8 - 2 7 - 8 4

SIGN. FWM

PAGE 1 0 - 1 6 3

ACTIVITY

AREA TRAVEL

CONVECTION OVEN INSTALLATION

CONDITIONS

WET	DOCK	ARFA

METHOD	NO.	SEQUE	NCF	МОГ)EI						
			SEQUENCE MODEL							FR	TMU
'		А	В	_	G	Α	В	Р	Α		T
FROM TOOL BOX TO AFT STAIRS		А	В	_	G	А	В	Р	Α		
		А	В	_	G	Α	В	Р	Α		
OR RETURN (293 FT)		А	В		G	Α	В	Р	А		
1		А	В	_	G /	A F	в Р	,	А		Τ
FROM AFT STAIRS TO TOOL		Α	В		G	Α	В	Р	Α		
·		Α	В		G		В	Р	Α		
OR RETURN (700 FT)	<u> </u>	Α			G				Α	<u>I</u>	<u> </u>
,	Ĺ'	Α	В	G	Α	В	Р	Α			<u> </u>
<u>FROM TOOL BOX 10 GALLEY</u>	<u> </u>	А	В		G	Α	В	Р	Α	<u> </u>	<u></u>
,	<u> </u>	Α	В		G		В		Α	<u> </u>	
OR RETURN (325 FT)	<u> </u>	А	В		G		В		Α	<u> </u>	
, 	<u> </u>	А	В		G		В		А	<u> </u>	<u> </u>
	<u> </u>	Α	В		G	Α	В	Р	Α		
, 		А	В		G	Α	В	Р	А		
		А	В		G	Α	В	Р	А		<u> </u>
·		А	В	_	G	Α	В	Р	Α		
		Α	В		G		В	Р	Α		
, 		А	В	G	М	Χ		ļ	Α		
·		А	В	G	М	Х		i	Α		—
1		А	В					ı	Α	†	
·!		А	В					I	А		-
1		А	В	G				I	Α	†	+
		А	В	G	М	X		I	А	\top	\top
1		А	В							+	
,		А	В	G	М	Χ		I	А	+	†
1		А В (3 A	В	Р		A F	ВР	А	†	
,		A B (G A	В	Р		Α !	R P	А	+	
,	\vdash								Α	+	+
,	\vdash	-								+	+
,										+	+
										+	+
r 	\vdash									+	+
,	-	+								+	+
,	_	_								+	+
,										+	+
										+	+
,										+	+
	_	-								+	+
,										+	+
		АЬ) /s	D.	P						1777
,	<u> </u>	—	—								1440
<u>. </u>	12	—								15	966 49
,	٠ د ا	—						<u> </u>	<u>, 0</u>	7	44
	OR RETURN (29.3 FT) FROM AFT STAIRS TO TOOL OR RETURN (700 FT) FROM TOOL BOX TO GALLEY	FROM AFT STAIRS TO TOOL OR RETURN (700 FT) FROM TOOL BOX TO GALLEY OR RETURN (325 FT)	A A A A A A A A A A	A B B A B B A B B B B	A B B A B B A B B A B B	A B G G FROM AFT STAIRS TO TOOL	A B G A	A B G A B G A B	A B G A B P	A B G A B P A A B B G A B P A A B B G	A B G A B P A

MOST - calculation

CODE 3009.03 DATE 8-27-84 SIGN. EWM

10-164

PAGE

CONVECTION OVEN INSTALLATION

LAYOUT & DRILL PADS

		(
~~.	IDITIO	
		45

ACTIVITY

NO.	METDOCK AREA	NO.	SEC	UEN	CE N	חחבי	· · · · · · · · · · · · · · · · · · ·				E	722
NO.	METHOD		7	A,				В -	٥.	Λ.\	FR	TMU
3	LAYOUT TO DRILL WITHOUT	6	╀	$\frac{\gamma_{\perp}}{A}$	<u>В</u>	G		<u>в</u>	P	A 0)	8(2)	640
	BITOUT TO PICTEE WITHOUT		T	A	В	G	A	В	P	Ā	-	
	TEMPLATE (CODE 1003.10)			Α	В	G	Α	В	Р	A	 	-
^				Α	В	G	Α	В	P	A		
<u>Z</u>	PLUG IN EXTENSION CORD	<u> </u>	-	<u>A</u>	B	G	<u>A</u>	<u>B</u>	P	<u>A</u>		
	(CODE 1004.13)	-	 	A	В	G	A	B	P	A		
				A	В	G	Α	В	P	A	 	
3	CHANGE DRILL BIT (CODE 1004.14)			Α	В	G	Α	В	Р	Α		
4	HAID CEED DOWN DIT TO SERVE		 	<u>A</u>	В	G	<u> </u>	В	P	<u>A</u>	ļ	
	HAND FEED DRILL BIT TO FROM	ļ	┢	A	B B	_ <u>G</u>	A	B	P P	A		
	WORK PIECE (CODE 1004.15)			Α	В	G	A	В	P	Ā		
	•			Α	В	G	Α	В	Р	Α		
5	OPEN VISE			A	В	G	Α .	В	P	Α		
6	PLACE OR REMOVE PAD IN VISE		-	A _	В	G G	A	B	P P	A		
		5		AL	ВО	Gį		1×0				560
7	TIGHTEN OR LOOSEN VISE	7		ΑĮ	ВО	GĮ	М6)x 0	10	Αo	8(2)	1280
8	PROCESS TIME TO DRILL 1/8"DIA		-	A	В	G	M	X	<u> </u>	Α		
0	_		-	A	B B	G	M M	×	+	A		
	HOLE (MAT'L & CONDITION CODE			Α	В	G	М	x	1	A		
	0132 @ 1" DEPTH)		<u> </u>	<u>A</u>	В	G	M	X	1	A		
	0132 G I DEPIH)		Α	A B G	B	G 3 P	M	X	1 3 P	Α		
9	PROCESS TIME TO DRILL 916" DIA		A	3 G	A	3 P				A		
	_		А	3 G	A I	3 P		A E	3 P	Α		
	HOLE (MAT'L & CONDITION CODE			B G		3 P		A E	<u> </u>	Α		
	0132 @ 1"DEPTH)		-	G G		3 P			3 P	<u>A</u>		
	0132 011111		-	3 G					3 P			
	-		A E	3 G	A E	3 P		A E	3 P	A		
				G					3 P			
				G G					3 P			
				G					P			
		ı								90	4	5560
		2							29	60		2960
		3								00	2	4800
		8								<u>30 </u> 29	8	<u>4240</u> 2516
		9					···	-		17		<u>4468</u>
TIME										 		7,024

MOST - calculation

CODE

3009.04 Date **8-27-84**

SIGN. FW M

CONVECTION

OVEN INSTALLATION

PAGE 10-165

ACTIV			,
	TAP & CHECK PADS		
COND	DITIONS WETDOCK AREA		
10.	METHOD AREA	NO.	SEQUENCE MODEL FR TMU
			A1 B0 G3 A1 B0 P1 A0 2 120
1	GET TOOLS & EQUIP	2	(A1 BO G1 A1 BO P1 A 0)(4)Z 320
_		4	(A1 BO G1 A1 BO P3 A 0)3)4 72
2	PLACE OR REMOVE PAD IN VISE		A B G A B P A
	1	<u> </u>	A B G A B P A
3	TIGHTEN OR LOOSEN VISE		A B G A B P A A B G A B P A
4	LADON CATTING FILLS		A B G A B P A
	APPLY CUTTING FLUID	 -	A B G A B P A
5	INSERT TAP		A B G A B P A
—	INSER! IT!		A B G A B P A
6	CHASE THREADS		A B G A B P A
			A B G A B P A
7	WIPE CLEAN		A B G A B P A
		<u> </u>	A B G A B P A
8	SET UP TO BOLT (CODE 1005.02)	'	A B G A B P A
		<u> </u>	A B G A B P A
9	POSITION OR REMOVE BOLT		A B G A B P A
	1 / can = 100 = 00)	3	(A BO G M6) X O 10 A0 (4)2 641
	(CODE 1005.03)	 '	A B G M X I A A B G M X I A
10	TURN 1/2"BOLT (CODE 1005.04)		A B G M X I A
10	UKN 12 BOLT (LODE 1000,07)		A B G M X I A
	1		A B G M X I A
			A B G M X I A
			A B G M X I A
		5	(A, BOG, A, BOB FG7 A, BOP, AO) (3)4 9000]
			A1B0G1 A1 B0P3 532 A1B0P1 A0 4 1601
		7	A, BOG, AOBOP, A, S6) A, BOP, AO (2) 4 1600
<u> </u>		<u> </u>	A B G A B P A B P A
		<u> </u>	A B G A B P A B P A
	<u> </u>	 '	A B G A B P A B P A B P A
	1	 	A B G A B P , A B P A A B G A B P A B P A
			ABGABP ABPA
	1		ABGABP ABPA
			ABGABP ABPA -
			A B G A B P A B P A
			ABGABP ABPA
			A B G A B P A B P A
		8	970 970
		9	410 (2)4 3280
		10	559 (2)4 447;
TIME	F =		22,722
50514			ا الماء الماء

MOST - calculation

3009, 05
DATE 8-27-84
SIGN. FWM

Snipbulio							SIG	٧.	FW	M	
	CONVECTION OVEN INST	ALL	ATIO	7			PAG	E	10-1	66	
ACTIVITY	BOLT UP PADS										
CONDITION		•									
NO. MET		NO.	SEQUE	NCE	MODE	L				FR	TMU
		1	А	В	G	A	В	Р	Α		0
I W	IT FOR RIGGERS TO TURN	5	A	В	G	A	8	Р	Α	ļ	0
\ \n	EN OVER ON SIDE	-	A	B	G G	<u>A</u>	B	P	A A		
		、ﻟᆖ	А	В	G	A	В	P	A		
2 SE	ET UP TO BOLT (CODE 1005.02	<u>/ </u>	A	8	G	A	В	P	A		
3 PC	SITION BOLT (CODE 1005.03)	-	A		G	A	B	P	A		
j j			A	В	G	Α	В	P	Α		
4 Tu	RN 1/2" BOLT (CODE 1005.05)		A	В	G G	A A	<u>В</u> В	P	<u>А</u> А	<u> </u>	<u> </u>
5 W	AIT FOR RIGGERS TO RIGHT		A	В	G	A	В	P	A		
1 1 .			A	В	G	Α.	В	Р	A		
- 4	POSITION OVEN	-	A	B B	G G	A A	<u>В</u> В	P P	<u>A</u>	<u> </u>	
6 M	EASURE FOR ALIGNMENT	-	A	В	G	A	В.	P	A A		
			А	В	G	Α	В	P	A		
		┼	A	B B	G G	A M	B X	P .	A		ļ
		-	A	В	G	M	_ <u></u>	<u> </u>	A	-	
			A	В	G	М	х	Ī	A		
		 	A	B	G	M	X	1	A A		
		-	A	В	G	M	_ <u>^</u>	<u> </u>	- ^	 	
			А	В	G	M	x	i	Α		
			A	В	G	M	X V.	1	A	7.5	
		6	A B C			A3W		B P		(8)	3400
 		+	AB					B P			
			А В (3 A	ВР		Α	в Р	Α		
	•	 	ABC					ВР			
		+	ABC					B P			
			АВО					ВР			
			а в с	_				в Р			
		-	A B G					B P			
			A B G					B P			
			а в с				Α	ВР	Α		
 		-	A B G	A	ВР	•••	<u> </u>	ВР			075
		3							170 410	4	970
		4							810	4	3240
TIME =											,250

FORM R-1458

MOST - calculation

30009.06 DATE 8 - 27 - 84

SIGN. FWM

CONVECTION OVEN INSTALLATION

PAGE 10-167

ACTIVITY

WELD PADS IN **PLACE**

COND	WELD PADS IN PLACE				
	WET DOCK AREA	NO.	SEQUENCE MODEL		 :
NO.	METHOD	NO.		FR	. TMU
1	GET WELDING EQUIP	2	A ₆ B ₆ G ₃ A ₁ B ₀ P ₁ A ₀ A ₁ B ₀ G ₁ A ₁ B ₀ P ₃ A ₀		. 170
<u> </u>	ge. Weaving Egoti	3	A, BOG A BO P3 A	Z	14
2	PLACE SHIELD	4	A B B G A B B P A A D		40
		5	A B O G I A I B O P3 A O	16	960
3	PLACE GLOVES	10	A, B O G , A , B O P , A O	3	120
,		12	A B O G3 A C B C P A O		170
귀	GET & ASIDE WHIP	┼	A B G A B P A		
	LIBERT WEIDING SOD	-			٠.
5	INSERT WELDING ROD	+	A B G A B P A A B G A B P A		
6	CLOSE & OPEN SHIELD		A B G A B P A		-
9			ABGABPA		٠.
7	TACK WELD PADS		A B G A B P A		
			A B G A B P A		
8	WELD PADS DOWN		A B G A B P A	· · ·	· ·
a	OFICACE COUNT CODE	<u></u>	A B G A B P A		
9.	RELEASE SPENT RODS	+	A B G A B P A A, B G G M X O I O A O	11	1921
/0	REMOVE SHIELD & GLOVES	6		64	10.240
70	REMOVE SHILLS I GLOVES	9	AOBOGI MI XO IO AO	16	32
11	CLEAN WELDS		A B G M X I A		
			A B G M X I A		
12	RETURN WELDING EQUIP		A B G M X I A		
			ABGMXIA		
		ļ	A B G M X I A	<u> </u>	2000
		11		(16)	<u>322</u> ^
		-	ABGABP ABPA ABGABP ABPA		
		-	A B G A B P A B P A		
		+	A B G A B P A B P A		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		•• ·- ·- ·- ·- ·- ·- ·- ·- ·- ·- ·- ·- ·-
		 	ABG, ABP ABPA		
			A B G A B P A B P A		
			A B G A B P A B P A A B G A B P A		
		-	ABGABP ABPA		
		8	PROCESS TIME 17.0 MIN.		28.46
		-	PROCESS TIME TO MIN.		50 0, 13 ,
TIME	-			4.	5,820

MOST - calculation

3010.01 DATE 8-8-84 SIGN. FWM

Ship	building							SIGN			4 4	
		HOLET & IN ALLEGAN	.	/				<u> </u>			M	
ACTIV	'ITY	HOIST AND MONORAIL INST	ALLF	+110N				PAG		10-	168	
	<u> </u>	3 PREPARATION										
CONDI	TIONS WE	T DOCK AREA										
NO.	METHOD		NO.	SEQUEN	CE I	MODE	L				FR	TMU
				A	В	G	A	В	Р	A		
	AVER	AGE INITIAL JOB		Α	В	G	Α	В	Р	Α		
	0050	(2000)	<u> </u>	A	8	G	Α	В	<u> P</u>	A	 	<u> </u>
<u> </u>	PREP	ARATION (CODE 1001.12)		A .		G	A	8	P P	<u> </u>	-	
2	GET	R RETURN TOOLS TO	 	A	B	G	A		P	A	 	
	9010	C RETURN TOOLS TO		A	8	G	A	В	P	Ā	†	
	TOOL	BOX (CODE 1001.111)		А	В	G	A	В	P	Α		
		•		А	В	G	Α	В	Р	A		
3	SECUR	E PARTS FROM WAREHOUSE	<u> </u>	Α_	В	G	Α	В	Р	Α	ļ	
		(400 - 100 100)	ļ	A	В	G	<u> </u>	В	P	<u> </u>	 	
		(CODE 1001.132)	 	A	B	G	A	B	P	_ <u>A</u>	-	
4	RETUR	N TOOLS TO TOOL CRIB		A	В	G		В	÷-		 	
	IVE IVE	7 10023 10 .002 CA.O		A	В	G	A	В	P	A		
		(CODE 1001.121)		Α	В	G	Α	В	Р	A		
	_			А	В	G	Α	В	Р	Α		
				A	В	G	A	В	Р	Α		
				Α_	<u>B</u>	G	M	X		_ <u>A</u>		
				A	8	G G	M M	×	1	A	 	
				A	В	G	M	×	i	_ _	_	
				Α	В	G	M	X	ı	A	 	
				Α	В	G	М	х	i	Α		
				А	В	G	М	X	L	Α		
				A	В	G	M	Х	1	A		
				A B G	A	ВР			B P		ļ	
				A B G					B P		 	
				A B G					B P		 	
				A B G					ВР		 	
				A B G				Α	в Р	Α		
				A B G					ВР			
				ABG					ВР			
				A B G					8 P		<u> </u>	
				A B G A B G					B P			
				A B G					3 P		-	
				A B G					ВР		l	
				A B G	Α	Вρ			В Р			
			1						,00			42,001
ļļ			2						44		2	880
		•	3 4						44			11,445
TIME	· · · · · · · · · · · · · · · · · · ·		7			 .		15,	41	/	L	15,417
I INTE	-]	69	,743

MOST - calculation

CODE

3010.02

DATE 8 - 8 - 8 4

SIGN. F W M

HOIST AND MONORAIL INSTALLATION

PAGE 10-169

OND	ITIONS		
	WET DOCK AREA	NO.	SEQUENCE MODEL FR TMI
NO.	METHOD	110.	A B G A B P A -
,	From Tool Box To Tool	-	A B G A B P A
	FROM TOOL BOX TO TOOL		A B G A B P A
	ROOM OR RETURN (450 FT)	\vdash	A B G A B P A
	ROOM OF REIDRIN (100 F.)		A B G A B P A
2	FROM TOOL BOX TO STAIRS,	-	ABGABPA
=			ABGABPA
	OILEVEL MIDSHIPS (350 FT)		A B G A B P A
			ABGABPA
3	FROM STAIRS TO SCAFFOLDING		A B G A B P A
_			A B G A B P A
	ABOVE HANGER DECK OR		A B G A B P A
			A B G A B P A
	RETURN (388 FT)		A B G A B P A
			A B G A B P A
	FROM STAIRS TO FREE STOCK		A B G A B P A
			A B G A B P A
	OR RETURN (300 FT)		A B G A B P A
			A B G M X I A
			A B G M X I A
			A B G M X I A
			A B G M X I A A B G M X I A
			ABGMXIA
			A B G M X I A
			A B G M X I A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			A B G A B P A B P A
			ABGABP ABPA
		1	3300 2 66
			2450 2 49 0
		2	2700 4 10,8

2200

MOST - calculation

CODE 3010.43

7,660

INICALLO		aic	sulation		010	
INGALLS Shipbuilding				DATE 8-	<u>8-84</u>	
Cinpbanenig				SIGN. F. V	√. M.	
	HOIST AND MONORAIL INS	TALL	ATION	PAGE 10-	170	
ACTIVITY						
	YOUT CENTERLINE					
CONDITIONS	ET DOCK AREA					
NO. METHOD	ET DOCK AKEA	NO.	SEQUENCE MODEL		FR	TMU
		4	A, B, G, A	B32 P6 A0		560
1 MFAS	URE FROM ENDS OF BEAM	7	A / B o G 3 A /		2	120
		8	A3 B24G0 (A)	Bo PG) Ao	(4)4	2200
2 MARK	MEASUREMENTS		A B G A	в РА		
			ABGA	вРА		
3 PULL O	OUT CHALKLINE	↓	A B G A	B P A	 	
	4.14.144		A B G A	в Р А	 	ļ
4 PLACE	CHALKLINE	+	A B G A	B P A	 	
PALAN	OHAL PLINE				 	ļ
3 SIYAP	CHALKLINE	†	A B G A	B P A	 	
6 OFWIN	D CHALKLINE		A B G A	B P A		
O ACIVITY	·		A B G A	ВРА		
7 GET S	RETURN HAMMER & PUNCH		A B G A	в Р А		
			A B G A	B P A		
8 PLACE	PUNCH ON MARKS		A B G A	B P A		
0 0 = 1	a annual in Arma		A B G A	B P A		
9 CENTE	R PUNCH MARKS	3	A B G A	B P A		(00
10 1415.050	T MARKS	5	A 1 B 0 G 1 M 3	X0 10 A0	12	600
10 INSPEC	I MAKKS	6	1	XO 10 AO		30 1150
			A B G M	X I A		1130
			A B G M	X I A		
			A B G M	X 1 A		
			A B G M	X I A		
		+.	A B G M	A 1 X	 	
		2	A 1 8 G A 6 32 P1 A6 M32	*/ 1801 AO	(2)	1460
			A BOG A BOP A R			
						1280
			ABGABP	ABPA	10	1,00
			ABGABP	ABPA		
		igsquare	ABGABP	ABPA		
			ABGABP	ABPA		
:			ABGABP	ABPA		
		+	A B G A B P A B G A B P	A B P A		
			ABGABP	ABPA		
		+	ABGABP	АВРА		
			ABGABP	ABPA		
	·····					
ŀ		 	•			
					l	
TIME -				1		

MOST - calculation

CODE 3010.04 DATE 8-8-84 SIGN. F. W.M. PAGE 10-171

HOIST AND MONORAIL INSTALLATION

ACTIVITY LAYOUT & DRILL BEAM

NO.	MET DOCK AREA	NO.	SEC	UEN	CE M	ODEL					FR	TMU
		7	П	A o	Bo	GO	A/6	B3	2 Po	Ao	2	960
1	LAYOUT TO DRILL WITH TEMPLATE			Α	В	G	Α	В	P	Α		
•	•			Α	В	G	Α	В	Р	Α		
	(CODE 1003.20)			Α	В	G	Α	В	Р	Α		
				A	8	G	Α	В	Р	Α		
2	PLUG IN EXTENSION (CODE 1004.13)			Α	8	G	Α	В	Р	<u>A</u>	 	
				Α	В	G	Α	В	P	<u> </u>		
3	CHANGE DRILL BITS (CODE 1004.14)			A	8	G	<u>A</u>		P	- <u>A</u>	-	
.1	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-	A .	B	G	A	<u>в</u> в	P	A	 	
4	HANDFEED DRILL BIT TO FROM		-	A	В	G	Ā	<u>B</u>	P	A A	\vdash	
	WORKPIECE (CODE 1004.21)		-	<u> </u>	В	G	_ <u></u>	В	P	A .		
				Ā	B	G	A	В	Р	A		
5	PROCESS TIME TO DRILL Y8" DIA			A	В	G	Α	В	Р	Α		
				A	В	G	Α	В	Р	Α		
	HOLE (MAT'L & CONDITION CODE			Α	В	G	Α	В	P	A		
				Α	В	G	Α	В	Р	Α	<u> </u>	
	0187 @ 1" DEPTH)			Α	8	G	Α	В	Р	Α		
	17."			Α	В	G	М	X		A		
6	PROCESS TIME TO DRILL 132 DIA		<u> </u>	Α	В	G	M	X		<u>A</u>		
			-	_ <u>A</u>	В	G	M	×	<u> </u>	A A	 	
	HOLE (MAT'L & COND CODE		-	A	<u>B</u>	G	M	$\hat{\mathbf{x}}$		A		
	0187 @ 1" DEPTH)		-	A	В	G	м	×	ī			
	0187 C : 92		\vdash	Α	В	G	M	х	1	Α		
7	MOVE WITH EQUIP TO EACH			Α	В	G	М	X	1	Α		
			Α	8 G	Α	ВР		Α	ВР	Α		
	LOCATION		Α	ВG				Α	В Р	Α		
			Α	B G	A	ВР		A	ВР	Α	1	
									ВР			
		<u> </u>		B G			·		B P			
			+	B G					8 P			
		 	1	B G					B P		1	·
		 	i	B G					ВР		\vdash	
		 -		B G					ВР		 	 .
		-	+	B G					ВР			
				B G				A	в Р			
		1								23	16	516
		2							290		<u> </u>	296 480
		3							24		2	480
		4								10		352
		5	-							75		120
		6	1						8	4	116	134.

MOST - calculation

CODE

3010.05 DATE 8-8-84

SIGN. FWM

HOIST AND MONORAIL INSTALLATION

PAGE 10-172

ACTIV	VITY BOLT PIVOT BLOCKS-TEMPOR	ΔΡΥ			
COND	TIONS	A IX 1			
	WET DOCK AREA		LOCOUPIOS MODEL		
NO.	METHOD	No.	SEQUENCE MODEL	FR	TMU
	DI OCKS	-	A / B O G / A / B O P3 A O	4	240
1_	PLACE PIVOT BLOCKS	5	A / B O G / A / B O P / A O A O B O G O A / 6 B 3 2 P O A O	4	1920
2	SET UP- BOLT OR UNBOLT (CODE 1005.02)	_6_	AO BO GO A/6 B32 PO AO A B G A B P A		1720
	GET OF BOET ON UNBOET (CODE 1000.02)		AB GABP A		
3	POSITION BOLT (CODE 1005.03)		A B G A B P A		
			A B G A B P A		
4	TURN BOLT (1/2") (code 1005.04)		A B G A B P A		
	BIVOT BLOOKS		A B G A B P A		
5	REMOVE PIVOT BLOCKS		A B G A B P A B G A B P A		
	MOVE WITH FOUR TO FACIL		A B G A B P A		
6	MOVE WITH EQUIP TO EACH		A B G A B P A		
	LOCATION		AB GABP A		
			A B G A B P A		
			AB GABPA		
			A B G A B P A		
			A B G A B P A A B G M X I A		
			A B G M X I A A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A A B G A B P A B P A		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			A B G A B P A B P A		
			A B G A B P A B P A B C A B P A		
			A B G A B P A B P A B B A B P A		
			ABGABP ABPA		
			ABGABP ABPA		
			A B G A B P A B P A		
		2	970		1940
		3	(410)	16)2	13,120
		4.	(559)	16)2	17.888
TIME	=			35	5,268

MOST - calculation

CODE

3010.06 A TE 8-8-8

SIGN. FWM

PAGE 10-173

HoIST AND MONORAIL INSTALLATION

ACTIVITY WELD GUIDE TABS IN PLACE

ο.	METHOD	NO.	SEQUENCE MODEL	FR	TMU
		_3	A6 B6 G3 A6 B/6P/ A0		-380
	MEASURE FROM PIVOT BLOCKS	4	A/ BOG/ A/ BO P3 AO		- 60
		5	A ₁ B ₀ G ₁ A ₁ B ₀ P ₃ A ₁	2	140
	MARK PLACEMENT FOR TABS	9	A B G A B P A O		40
2	GET WELDING EQUIP	10	A/ BO G3 A6 B/6 P/ AO		12C 270
	GET WEEDING EGO!!	1	A B G A B P A		
4	PLACE SHIELD		A B G A B P A		
		<u> </u>	A B G A B P A		
5	PLACE GLOVES		. A B G A B P A		· · · · · · · · · · · · · · · · · · ·
,	GET & ASIDE HANDLE	-	A B G A B P A A B G A B P A		
2	GET & ASIDE HANDLE	 	ABGABPA		
<u>Z_</u>	CLOSE & OPEN SHIELD		A B G A B P A		
	•		ABGABPA		
3_	WELD TAB TO BEAM		A B G A B P A		
o i	REMOVE SHIELD & GLOVES		A B G A B P A A B G A B P A		
1	REMINE SHIELD 4 GLOVES	17	A, BO G, M, XO 10 AO	4	120
٥	RETURN WELDING EQUIP	8	A / B O G / M / X 67 10 AO	2	1400
-			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
			A B G M X I A		
		1	A1 B0 G3 A0 (B16 P1 A6 M16 A 1 B0 P1 A0	(2)	840 140
		2	A1 BOG, A0 BOP, A1R3) A1 BOP1 A0	(2)	140
		ļ	A B G A B P A B P A		
			A B G A B P A B P A A B G A B P A		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA ABGABP ABPA		
		-	A B G A B P A B P A		 ,
		+	A B G A B P A B P A		
			ABGABP ABPA		
		 			
		-			
rime	= _			 3,5	1

MOST - calculation

CODE

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DATE 8-8-84

SIGN. FWM

HOIST AND MONORAIL INSTALLATION

PAGE 10-174

CTIVITY			
	PARITION	DAIL	1 AVANT &

	ON RAIL, LAYOUT	ME	SURE								
CONDITIONS	. A A E A										
NO. METHOD	CK AREA	NO.	SEQUEN	ICE MO	DEL					FR	TMU
		1	A		G	Α	В	Р	A		0
I RIGGER HAN	G CHAIN FALLS	4	AI	Bo	G3	Α,	ВО	P6	Ao	2	22
		9		B 0							14
2 SLIDE RAIL	ALONG PLATFORM	 	A		G	A	В	Р	Α		
			A		G	Α	В	Р	A		
3 PICK UP ON	IE END	+	A		G G	A	B B	P P	A	}	-
4 PLACE SLING	IR INDER PAIL		Ā		G G	<u> </u>	8	P			
- TEACL GLINE	15 ONDER RINE	 	A		G	A	В	P	A		
5 UFT WITH	CHAIN FALL		А	В	G	Α	В	P	A		
			A		G	Α	В	Р	A		
6 ROLL RAIL	OVER	-	A		G_	Α	В	P	A		<u> </u>
7 LICT DAY	TO COSITION	-	A		G G	<u> </u>	<u>B</u>	P	A .		
7 LIFT RAIL	10 POSITION	+	A	-	G G	A	B B	P P	A		
8 ADJUST LE	NGTH WISE		A		<u></u>	A		P	A		<u> </u>
			Α.	В	G	Α		P	A		
9 PLACE WED	GES .		A		G_	Α	В	Р	Α		
10	A	2		B24 (34
10 DRIVE WET	<u>GES</u>	5		B16							46
11 MEASURE	PASITION	6		B32((30)	155
TI MEASURE	1 00111014	7		B o ((10)	430
12 PULL TIGH	T	8		B6						2	42
	- d	12		B Q ((2)	110
13 MARK HOLE	S PEDGES OF PIVOT	16		B o ((40)	163
BLOCKS O	AL PAII		A B G								72
BLUCKS 0	N KAIL		A I B O G							2	192
14 MEASURE F	FOR PAD THICKNESS		A BOG								224
		15	A / Bo G	AB	(P)	Mo	AL	0P/	Ab		5/
15 WRITE DOW	IN THICKNESS		A B G								
16 LOWER RA	11		A B G				A E	P P			
16 LOWER RA	1		ABG					P			
			ABG					. P			
	· · · · · · · · · · · · · · · · · · ·		A B G					P	$\overline{}$		
			ABG				АВ	Р	Α		
		-	A B G	~~~~				P			
		-	ABG	A B	Р		A E	Р	<u> </u>		
	•	-									

MOST - calculation

CODE

3010.08 Date 8-8-84

16

16

197

SIGN. F WM

PAGE 10-175

	HOIST AND MONORAIL IN	STA	LLATION F	PAGE 10-1	<i>75</i>	
ACTIV						_
COND	TIONS					
	WET DOCK AREA					
NO.	METHOD	NO. S	SEQUENCE MODEL	D D A	FR	TMU
	LAYOUT TO DRILL WITH TEMPLATE		A B G A	B P A	2	960
	ATOM TO DRICE WITH TEMPERIE		A B G A	ВРА		
	(CODE 1003.20)		A B G A	в Р А		
_	N. EVERNIGION (GODE 1001 10		A B G A	в Р А		<u> </u>
2	PLUG IN EXTENSION (CODE 1004.13)	A B G A	B P A		
3_	CHANGE DRILL BIT (CODE 1004,14)		A B G A	ВРА	Ī	
	•		A B G A B	в Р А		
4	HANDFEED DRILL BIT TO F FROM		A B G A	ВРА		
	Week Diege (CODE 104.91)			BPA		
	WORK PIECE (CODE 104.21)		A B G A B	B P A		
5	PROCESS TIME TO DRILL 1/8"DIA		A B G A	B P A		
			A B G A	B P A		
	HOLE (MAT'L & COND CODE 0013	-	A B G A	B P A		
	@ ½ DEPTH)		A B G A A B G A	В Р А В Р А		
			A B G M X	I A		
6	PROCESS TIME TO DRILL 1/2"DIA		A B G M X	ΙA		
			A B G M X	I A		
	HOLE (MAT'L & COND CODE		A B G M X	I A		
	0013 @ ½" DEPTH		A B G M x	I A		
			A B G M X			
7	MOVE WITH EQUIP TO EACH		A B G M X			
	LOCATION		A B G A B P A B G A B P	A B P A A B P A		
	LOCATION		A BGABP ABGA BP	ABPA		
			ABGABP	АВРА		
			ABGABP	ABPA		
			A B G A B P	A B P A		
			A	A B P A A B P A		
			ABGABP	ABPA		
			A BGABP	АВРА		
·			ABGABP	ABPA		
		<u> </u>	ABGABP	323	16	5168
		2		2960	10	296
		3		2400	2	480
		1		1 0	3.2	3520

6

MOST - calculation

CODE 30/0.09

DATE 8 - 8 - 8 4 SIGN. F W M

ACTIVITY LAYOUT \$ DRILL PADS NO. METHOD		HOIST_ AND MONORAIL INS	TALL	ATION	١			PA	GE	10- 1		
NO. METHOD NO. SEQUENCE MODEL FR TMU	ACTIV	ITV .										
NO. NETHOD LAYOUT TO DRILL WITH TEMPLATE A B G A B P A	CONDI											
LAYOUT TO DRILL WITH TEMPLATE		WET DOCK AREA		,								
LAYOUT TO DRILL WITH TEMPLATE	NO.	METHOD	NO.	 							FR	TMU
(CODE 1003.20) A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A CHANGE DRILL BIT (CODE 1004.14) A B G A B P A CHANGE DRILL BIT TO \$ FROM WORKPIECE (CODE 1004.21) A B G A B P A WORKPIECE (CODE 1004.21) A B G A B P A HOLE (MAT'L \$ COND CODE A B G A B P A A B G A B P A CO187 @ 3/8 " DEPTH) A B G M X I A HOLE (MAT'L \$ COND. CODE A B G M X I A CO187 @ 3/8 " DEPTH) A B G M X I A A B G M B P A B P A A B G M X I A A		I Aslance > DIII seems	<u> </u>	 							 	
CODE 1003.20		LAYOUT TO DRILL WITH TEMPLATE	 									
2 PLUG IN EXTENSION (CODE 1004.13) A B G A B P A CHANGE DRILL BIT (CODE 1004.14) 4 HANDFEED DRILL BIT TO \$ FROM WORKPIECE (CODE 1004.21) 5 PROCESS TIME TO DRILL Y8"DIA HOLE (MAT'L \$ COND CODE O187 @ 3/8" DEPTH) A B G A B P A HOLE (MAT'L \$ COND. CODE O187 @ 3/8" DEPTH) A B G A B P A A B G A B P A A B G A B P A COLORED A B G A		(CODE 1003.20)		А			Α					
A B G A B P A A B G A B P	2	PLUG IN EXTENSION (CODE 1004.13)										
A B G A B P A		•										
4 HANDFEED DRILL BIT TO \$ FROM A B G A B P A WORKPIECE (CODE 1004.21) 5 PROCESS TIME TO DRILL 18"DIA HOLE (MAT'L \$ COND CODE O187 @ 3/8 " DEPTH) A B G A B P A HOLE (MAT'L \$ COND. CODE A B G A B P A A B G A B P A A B G A B P A HOLE (MAT'L \$ COND. CODE A B G M X I A A B G M X I A HOLE (MAT'L \$ COND. CODE O187 @ 3/8 " DEPTH) A B G M X I A HOLE (MAT'L \$ COND. CODE A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G A B P A B P A A B G A B	3	CHANGE DRILL BIT (CODE 1004.14)	ļ									
A B G A B P A	1	HANDEED DOW BIT TO & FROM									-	
A B G A B P A		HANDPEED DRICE OUT TO TROOM									 	
A B G A B P A		WORKPIECE (CODE 1004.21)		А	В	G	Α	В	Р	A		
HOLE (MAT'L \$ COND CODE	-	-										
HOLE (MAT'L \$ COND CODE	<u>১</u>	PROCESS TIME TO DRILL YE DIA										
A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B P A A B G A B B P A A B G M X I A A B G M X	İ	HALE (MAT' & CAND CADE										
A B G M X I A												
A B G M X I A A B G M X I		0187 @ 3/8 " DEPTH)		Α	В	G	Α	В	Р	Α		
HOLE (MATIL & COND. CODE A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G A B P A B P A		1/ 11		Α_			M		ı			
HOLE (MATIL & COND. CODE A B G M X I A	_6_	PROCESS TIME TO DRILL YZ DIA										
A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M X I A A B G M B P A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B P A A B G A B P A B P A A B P A A B G A B P A B P A A B P A A B G A B P A B P A A B P A A B G A B P A B P A A B P A A B G A B P A B P A A B P A A B G A B P A B P A A B P A A B G A B P A B P A A B P A A B G A B P A B P A A B P A A B G A B P A B P A A B P A A B G A B P A B P A A B P		HOLE (MAT'L & COND. CODE		Α	В	G	M	х	1	A		
A B G M X I A		0187@3/8" DEPTH)			_							
A B G A B P A B P A A B P A A B G A B P A B G A B P A B P A A B G A B P A B P A A B G A B P A B G A B P A B C A B C A B C A B P A B C A B				А	В	G	М	х	1	Α		
A B G A B P							M					
A B G A B P												
A B G A B P A B P A B P A A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A A B G A B P A B P A B P A A B G A B P A B P A B P A A B G A B P												
A B G A B P												
A B G A B P A B P A B P A B P A B P A B P A B P A B				A B G	Α	ВР						
A B G A B P A B												
ABGABP ABPA ABPA ABGABPA ABGABP ABPA ABGABPA ABGABP ABPA ABGAP												
A B G A B P A B												
ABGABP ABPA												
1 323 14 5168 2 2960 2960 3 2400 2 4800 4 110 32 3520 5 30 16 480 6 38 16 608 TIME=								Α	ВР	А		
2 2960 2960 3 2400 2 4800 4 110 32 3520 5 30 16 480 6 38 16 608 TIME= 17, 536				A B G	Α	ВР		A				
3 2400 2 4800 4 110 32 3520 5 30 16 480 6 38 16 608 TIME= 17, 536				i							116	
4 110 32 3520 5 30 16 480 6 38 16 608 TIME= 17, 536											2	
TIME= 5 30 16 480			4									
TIME= 17, 536												
			6							38	16	608
				······································						<u>.</u>	17,	536

MOST - calculation

30/0.10 DATE 8-8-84

SIGN.

F <u>W M</u> PAGE 10-177 HOIST AND MONORAIL INSTALLATION

ACTIVITY

BOLT PIVOT BLOCKS TO RAIL

CONDITIONS

NO.	METHOD	NO.	SEQUEN	CE M	ODEL	•				FR	T M U
		1	Α/	B 0	G/	Α/	В 0	PЗ	A0	4	24C 96C
1	PLACE PIVOT BLOCK ON RAIL	5	A D	B0	G _O	A	6 B32	Po	A _O	2	960
			Α	В	(G A	В	Р	Α		
2	SET UP TO BOLT (CODE 1005.01)		А	В	(G A	А В	Р	Α		
			Α	В	(3 A	А В	Р	Α		
3	POSITION BOLT (CODE 1005. 03)		Α	В		G A		Р	Α		
			Α	В	G	Α	В	P	Α		
4	TURN THE BOLT (½") (CODE 1005.07)		A	В		G /		P	Α		Ь—
_	NITH FOUR TO FACIL		Α	В	(<u>P</u>	Α		
5	MOVE WITH EQUIP TO EACH		A	<u>B</u>				<u>P</u>	Α .		
			A	В	G	Α	В	Р	A		
	O C A T I O N		A	В		G A		P P	A		
			A A	В		G A		P	A A		
			A	В		3 <i>F</i>		Р	A		
			A	В		3 <i>F</i>		P	A		
			A	В		3 <i>F</i>		P	A		
			A	В		3 <i>i</i>		Р	Α		
			Α				X	ı	Α		
			А	В	G I	M	X	I	А		
			Α	В	G I		X	I	А		
			Α	В	G I	M	X	I	Α		
			Α	В	G I	M	X	I	Α		
			Α	В	G I	M .	X	I	Α		
			Α	В	G I	M :	X	Ţ	Α		
			Α			M :	X	I	Α		
			A B G					ВР			
			A B G					ВР			
			A B G					ВР			
			A B G					B P			
			A B G					ВР			
			A B G A B G					B P			
			A B G					вР			
			A B G A B G					B P			
			A B G					ВР			
			A B G					ВР			
			A B G					ВР			
			A B G					ВР			
		2					"		60		860
	İ	3						41		16	6560
		4						1 1	6		25,920
		E.						•		20	20,920
			I								1

MOST - calculation

3010.11 DATE 8-8-84

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				order FW		
	HOIST AND MONORAIL INST	ALLA	ATION	PAGE 10-/	78	
ACTIVI	TY REPOSITION RAIL					
CONDIT						
NO.	METHOD	NO.	SEQUENCE MODEL		FR	TMU
		5	A / B o G3 A /	Bo B A/	2	180
)	LIFT WITH CHAIN FALL	8	A/ B0 G/ A/	BO P6 A0	4	360
		14	A, Bo G, A,	BOP/ Ao	2	80
2	ROLL RAIL OVER		A B G A			
			A B G A			
3	LIFT RAIL TO POSITION		A B G A			
4	ADTINET I SALCTIMISE	-	A B G A	B P A	 	
	ADJUST LENGTH WISE		A B G A	B P A	·	
5	PLACE WEDGES		A B G A	B P A		
	. 5		A B G A	в Р А		
6	DRIVE WEDGES		A B G A	в Р А		
			ABGA	ВРА	ļ	
7	MEASURE POSITION		A B G A	B P A	 	
	OLAGE DATO	 	A B G A	B P A		
8	PLACE PADS	-	A B G A	B P A	+	
9	SET UP TO BOLT (CODE 1005.02)		A B G A	B P A	 	
	<u> </u>	1)x0 10 A0	(30)	1550
101	POSITION BOLT (CODE 1005.03)	2	A3 B6 G3 M3			150
İ		3	A3 B0 (G1 M3			430
1-1	PULL TIGHT	4	A 3 B6 G3 M3			420
	TURN BOLT 1/2" (CODE 1005.04)	_//	A B G M	X A	(Z)	110
12	10KN BOLT 72 ((DDE 1003.04)		A B G M	X I A		
13	RELEASE WEDGES		A B G M	X I A	1	
	7,00	6	A, BOG3A, BOP, FIC	A/BOP/AO	4	720
14	RETRIEVE WEDGES	7	A / BOG / A / BIOP / M/C	A/BOP/ AO	2	640
		/3	A, BOG, A, BOP, FIC) A, BoP, Ao	(z)	270
15	MEASURE FOR LEVEL	15	A, BoG, A0(B6P/A3M	32)A /BOP/ AO	(7)	2980
			A	A B P A A B P A		
			ABGABP	ABPA		
J			ABGABP	АВРА	 	
			ABGABP	АВРА		
			ABGABP	АВРА		
			ABGABP	ABPA	<u> </u>	
			A B G A B P	ABPA	ļ	
			A	A B P A	ļ	
		9		970		970
		10		410	16	6560
		/2		559	16	8944
TIME :	=				24	,364
	P-1/58					,

MOST - calculation

HOIST AND MONORAIL INSTALLATION

30/0./2 DATE 8-8-84

SIGN. FWM

PAGE 10-179

ACTIVITY

PREPARE & WELD PADS

CONDITIONS

	WET DOCK AREA				
NO.	METHOD	NO.	SEQUENCE MODEL	FR	TMU -
			A 81 B 6 G 1 A 81 B 0 P 1 A 0	2	~ 3400
1	BORROW OR RETURN AIR LINE	5	A / B O G / A / B O P 3 A O	2	120
		6	A / B o G / A / B o P 3 A /	4	280
2	ATTACH OR DETACH GRINDER	8	A / B o G / A / B o P / A o		240
	4.0.	9	A 6 B 6 G 3 A 6 B 16 P 1 A 0		380
3	GRIND OFF TABS	10	A B O G I A B O P I A O		80
.,	0. 17 1/5/2 0050	12	A B G A B P A	-	270
4	GRIND WELD PREP		A B G A B P A A B G A B P A	 	
5	MARE SILICIA COMO DO MEIA		A B G A B P A	-	-
<u> </u>	PLACE SHIELD GRIND OR WELD	 	A B G A B P A	 	
6	PLACE GLOVES GRIND OR WELD	 	A B G A B P A	 	
9	FLACE GLOVES GEIND OR WELD		A B G A B P A		
7	OPEN OR CLOSE SHIELD		A B G A B P A		-
			ABGABPA		
	GRIND OR WELD		A B G A B P A		
			A B G A B P A		
8	REMOVE SHIELD OR GLOVES		A B G A B P A		
		3	A / B o G / M / X /73 10 A o	2	3520
	GRIND OR WELD	4	A, BOG, M, Xxxx O Ao		12120
			A, Bo G/ M/ Xolo Ao		
<u>9</u>	GET WELDING EQUIP	11	A, BOG, M, (X 173)10 Ao	2.52)4	17560
			A B G M X I A		
10	GET SASIDE HANDLE		A B G M X I A		
	· ·		A B G M X I A		
	WELD PADS	2		2	640
17	RETURN WELDING EQUIP		A B G A B P A B P A		640
	REIDEN WELDING EQUIP		ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		
			ABGABP ABPA		. •
			ABGABP ABPA		-
			ABGABP ABPA		
			ABGABP ABPA		
			A B G A B P A B P A		
			ABGABP ABPA		
					<u> </u>
	<u> </u>		L		
TIME	=			39.	210
	D 1450		<u> </u>	- 17	

MOST - calculation

3010.13 DATE 8-8-84

SIGN. FWM																			
<u> </u>	HOIST AND MONORAIL INSTALLATION PAGE 10-12								0-12	30									
ACTIV					DIST				-				_						
CONDI	TIONS WET	. Dv	ck		0 E N														
NO.	METHOD	יים	1010		CEA			· · · · · · · · · · · · · · · · · · ·	NO.	SE	QUEN	CE M	ODE					FR	TMU
									5		A	В	G	A	В	P	A	 	0
1	SET U	PT	0	UNI	<u> 30LT</u>	· (c	ODE	1005.02			Α	В	G	Α	В	Ρ	Α		0
				ı	/_ 11	,			17		Αo	Во	G٥	AIG	B32	Pô	A٥	4	1920
2	TURN	Bo	LT		<u>/Z</u>		CODE	1005.04	4	-	_ <u>A</u> _	B	G	<u> </u>	<u>B</u>	P	<u> </u>	<u> </u>	
3	REMOV	IF	R り	ıT		(CODE	1005.03	.	├	A	B	G	- <u>A</u>	B	P P	A	 	
	, CLMOV	<u> </u>	110	<u>- 1 </u>			<u> </u>				Ā	B	G	A	В	P	Â		
4	LOWE	R	RA	IL.							Α	В	G	A	В	P	Α		
									<u> </u>	L	A	В	G	Α	В	P	Α		
5	SERVI	CE	<u> </u>	ЛV.	TER		UNT	PADS	 -	<u> </u> _	Α	В	G	A	В	P	Α	ļ	
6	RIGGE	. 0 0		ואכי	اط تــــــــــــــــــــــــــــــــــــ		7V: 6.	т-		\vdash	A A	8 8	G G	A	B B	P	A	-	
_ ပ	KIGGE	<u> </u>	<u>r</u>	رين		X	4013	l	 			8	G	$\frac{\Delta}{A}$	В	P	A A		
7	ROTAT	E	000	<u> </u>	70 A	LIG	N				Α	8	G	Α	В	Р	A		
	_										Α	В	G	Α	В	Р	Α		
8	PUSH	_H	15.		ZNC) R	ALL				<u>A</u>	В	G	Α	В	P	Α		
9	LAYOUT	- -	 -^	7.0	21/1	148	T CLA	117		_	A	B	G	A	<u>B</u>	P P	A_		
	LAYOU	-	10	<u> </u>	<u> </u>	<u> </u>	LINO	01	4		A	B32		M ₃	В Хо	10	A	(20)	1150
	TEM	PL	ATE	: (COD	E	1003.	10)	7		Α,		G,	M ₁	χ _ο	11	<u>۸</u> ه	<u>(707</u>	40
	·				-		_		8		Αı		G3	Мз	Χŋ	10	Αo		70
10	PLUG	IN	<u>E</u> x	TE	NSIC	N	(COD)	E 1004.13			<u>A</u>	В	G	M	X	1	A		
	CHANC	٠ E	מת	.,,	DIT	e /	^^DE	1004.14)			A A	B	G	M	×	1	A		
Ш	CHANG	<u> </u>	<u>UK</u>	<u> </u>	DI L	2 (CONE	1004.14)			Ā	В	G	M	$\frac{\hat{x}}{x}$	<u>.</u>			
12	HANDE	FE	ED	DF	2111	BIT	TO	& FROM			Α	В	G	М	x	ı	A		
					_					A	B G	A	ВР		A	3 P	Α		
	WOR	Kρ	EC	<u>E</u>	(CO1	DE	100	4.21)		A	B G		B P		Α !		A		
13	20045	0				. ~	נומ	. 1/4" DIA		A	B G		B P		A !		A .		
1.5	PROCE	23		W		<u>د</u> د	KILL	. 74 DIA		_	B G					3 P			
	HOLE	_(MA	TL	<u>. </u>	ON	DITI	ON CODE		_	B G					3 P			
										Α	B G	Α	ВР		A E	3 P			
	0013			/2	D	E PI	<u>H)</u>	·····	1								70		970
14	SET (10	TA	B,	\1 T	ST	nolon	ישה ומעכשה	2								59	16	8944
14	<u> </u>	<u> </u>	10	<u> </u>	<u>) L l</u>	Oll	٦٢ (ر٥	DE 100502	3 9								90	16	6560 5560
15	POSITI	101	1 6	300	Τ	(0	ODE	1005.03)	10		·					29			2960
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16	TURN	Be)LT		<i>7</i> 4	(C	DE	1005.05)	12								10	4	440
	A	. .	. 1	•1 f =1	C A .1			X ()	13								57	4	628
/_	WOVE	<u>. V</u>	VII	H	<u>- ಆ೧</u>	112	10	EACH	14								70	4	970
	LOCAT	TID	N						16								20	4	1680
TIME									<u> </u>				 -			•			932
FORM	R-1458																		

MOST - calculation

CODE 3010,1 8-8-84 DATE SIGN. FWM 10-181

HOIST AND MONORAIL INSTALLATION

ACTIVITY FINAL INSTALL RALL

	WETDOCK AREA		T								ब
10.	METHOD	NO.	SEQUEN							FR	+
		7				A16				4	1
1	RAISE RAIL		A	<u>B</u>	G	<u> </u>	<u>B</u>	P	<u> </u>	├	+
_	to com a fillamina com		A	В	G	_ <u>A</u>	В	P	A	┼	+
2	ADJUST LENGTHWISE		A .	В	G	<u> </u>	8	P P	<u> </u>	├	Ŧ
2	SCT NO TO BOLT (CODE 100501)		A	В		A	В		A	├	+
3	SET UP TO BOLT (CODE 1005.01)		A	<u>B</u>	G	A	B	P P	A	 	t
4	POSITION BOLT (CODE 1005,03)		A	В	G	A	В	P	- :-	-	t
7	POSITION BOLL (CODE 1005,05)		A			A	В	P	A	 	t
5	TURN BOLT VZ" (CODE 1005.07)		A	В	G	A	<u>-</u> В	P	A	 	t
<u> </u>	TORN BOLL TE CODE TOOMET		A	В	G	A	В	P	A	†	t
6	MEASURE FOR LEVEL		A	В	G	A	В	Р	A	 	t
<u> </u>	MCASONE FOR SEVER		А	8	G	Α	В	Р	Α		t
7	MOVE WITH EQUIP TO EACH		Α	8	G	Α	В	P	A		I
			А	В	G	Α	В	Ρ	Α		I
	LOCATION		А	В	G	Α	В	P	Α		
			А	В	G	Α	В	P	Α	<u> </u>	
			A	В	G	Α .	В	P	Α	 	1
	•		A3	B32	(G ₁	M3)	Χo	ما	Aρ	(50)	1
		2	A 3			М3				<u> </u>	1
			A	В	G	M	х	<u> </u>	Α	 	1
			A .	В	G	M	X	<u> </u>	A	 	ł
			A	В	G	M	<u> </u>	1	A	├──	1
			. A	B	G G	M	<u>x</u>	.		├──	1
			A		G	M	$\frac{x}{x}$	÷	_ <u>A</u>		ł
			A, BoG							(7)	t
		_6	A B G			~3~9		<u>о 7</u> В Р		151	ł
			A B G				A E			1	t
			A B G					P			t
			A B G				AE				t
			A B G				A E	P	A		t
-			A B G	А	В Р			P			Ī
			A B G	Α	ВР		A E	3 P	A		Ī
			A B G	Α	ВР		A E	3 P	Α		ŀ
	io.		A B G	Α	ВР		A E	P	Α		l
			ABG				A B				1
			A B G					Р		ļ	1
			A B G					P		 	1
			A B G	Α	ВР		AE	Р		├─	1
		3_	<u> </u>						860	 	1
		4							410		4
		5	<u> </u>					10	520	16	4

MOST - calculation

CODE

PAGE

3011.01 8/9/89 DATE

SIGN. FWM/TLC

10-182

COOLING COIL INSTALLATION

ACTIVITY

JOB PREPARATION

C	o	N	DI	TI	O	NS	;	
_	_							

AS	SEME	BLY	AREA
----	------	-----	------

CONDI	ASSEMBLY AREA										
NO.	METHOD	NO.	SEQUE	NCE	MODE	L.				FR	TMU
			А	В	G	A	В	P	A		
1	AVERAGE INITIAL JOB		А	В	G	Α	В	Р	Α		
			А	В	G	Α	В	Р	Α		
	PREPARATION (CODE 1001-12)		Α	В	G	A	В	Р	A		
			A	В	G	A	В	P	A		
2	SECURE PARTS FROM WAREHOUSE		A	В	G	Α	8	P	Α		
	(, , , , , , , , , , , , , , , ,)	<u> </u>	A	В	G	<u>A</u>	В	P	<u>A</u>	ļ	
	(CODE 1001.132)	ļ <u>.</u>	A	<u>B</u>	G	_ <u>A</u>	<u>B</u>	P	A	 -	
			A	B	G	<u>A</u>	В	P	_ <u>A</u> _		
3	RETURN TOOLS TO TOOL CRIB		A	B	G	A	B	P	<u>A</u>		
	(CODE 1001.121)	 	A	<u>в</u> В	G		В	P	<u>A</u>		
 -	(CODE 1001.1C)	 	A	<u>B</u>	G	A	В	P	- ^		
4	SIMPLE ADDITIONAL JOB		A	В	G	A	В	P	_ <u></u>		
 			A	В	G	A	В	P	A		
	PREPARATION (CODE 1001.21)		A	В	G	A	В	P	A		
			A	В	G	Α	В	Р	A		
1			_ A	В	G	Α	В	P	Α		
			Α	В	G	M	X	1	Α		
1			А	В	G	М	х	1	A		
			А	В	G	М	×	1	A		
İ		<u> </u>	Α	В	G	M	×		Α		
			A	В	G	M	×	1	A		ļ
			A	В	G	М	<u>X</u> _	1	Α		
İ		<u> </u>	A	B	G_	<u>M</u>	<u> </u>	1	A		
			A 0	B	G B P	М	<u> </u>		A		
				G A						ļ	
		ļ		G A	B P		A		A	-	
										 	
		 	A B				<u>A</u>		A		
l				G A			_ <u>^</u>		A		
			A B					B F			
			АВ					ВЕ			
			АВ		~			ВБ			
			АВ					ВБ			
			АВ	3 A	ВР			В			
			АВ	G A	ВР		А	ВГ	, V		
			а в					ВР			
<u> </u>			АВ (3 A	ВР			В			
l		1						12 0		1	42 001
		2	<u></u>				1	1,4	45	11	11,445
		3						54			15417
		4	<u> </u>					11	80	2	2360
TIME	*								1	71	223
	1 D 1450								i	1	<u></u>

FORM R-1458

MOST - calculation

CODE

3011.02

SIGN. FWM/TLC PAGE

COOLING COIL INSTALLATION

ACTIVITY

AREA TRAVEL

CONDITIONS AREA TRAVEL										·
ASSEMBLY AREA										
NO. METHOD	NO.	SEQU	ENC	MODE	EL.				FR	TMU
		A		B G	Α	В	Р	Α		
I FROM TOOL BOX TO MATERIAL		A	. 1	B G	А	8	Р	Α		
0,5 (000 50)	 	A		3 G	<u>A</u>	В	Р	A		-
PILE (800FT.)		A		3 G	A		P	A	 	
2 FROM MATERIAL PILE TO	-	A		3 G	$\frac{A}{A}$		P	A	┼	
7,11,2,11,2,11,2	1	A		3 G	A	8	P	A	1	
ASSEMBLY 306 LADDER (125 FT)		A	E	3 G	Α	8	Р	Α		
		A	E	3 G	Α	В	Р	Α		
3 UP LADDER SINTO COMPARTMENT	 	A		3 G	<u>A</u>	В	<u>P</u>	Α	<u> </u>	ļ
OR RETURN (45 STEPS)		A			A A		P	A	 	
OR RETURN (43 STEPS)	 	A			A A	В	- -		 	
4 FROM ASSEMBLY 306 LADDER TO		А	E		A	В	Р	A		
		А		G G	Α	В	Р	Α		
DRILL PRESS (965 FT)	ļ	A		G	Α	В	Р	Α		
5 From DRILL PRESS TO FREE STOCK	<u> </u>	A			<u>A</u>	В	Р	<u>A</u>	 	<u> </u>
5 FROM DRILL PRESS TO FREE STOCK	<u> </u>	A	B		A M	B X	P I	A	 	
(125 FT)	 	A			M	$\frac{}{x}$	<u>-</u> -	<u> </u>		
		A			М	×	_ i	A		·
6 FROM FREE STOCK TO		А	8	G	M	х	1	Α		
1010		A			М	X	1	Α	ļ	
ASSEMBLY 306 LADDER (840 FT)		A	8		M	<u> </u>		<u> </u>	 	<u> </u>
7 FROM ASSEMBLY 306 LADDER	 	A	8		M	<u> </u>	 -	A .	 	
7 1 1 100 21 100 21 200 21 200 21		А В	G ,A	8 P			ВР	A		· ·
TO TOOL BOX (925 FT)		А В	G A	ВР		Α	ВР	A		
				ВР		Α	ВР	Α		
8 FROM TOOL BOX TO TOOL		A B					ВР			
ROOM OR RETURN (CODE 1002.16)	ļ	A B		. B P			B P			
ROOM OF ICTIOEN (CODE 1002:16)		A B					B P			
		АВ					ВР			
		АВ	G A	ВР		Α	ВР	A		
	1						552		3	16560
	2						96		3	2880
	3						81		4	3240
	4	,					96			6660 960
	6						58		-	5800
	7						63		3	19170
	8						113		4	45,244
TIME =								1	100	,514

MOST - calculation

3011.03
DATE 8/9/89
SIGN. FWM/TLC

COOLING COIL INSTALLATION

PAGE 10-184

ACTIVITY COLLECT & CLASSIFY LEGS

NO.	ASSEMBLY AREA	NO.	SEQUEN	CE M	ODEL					FR	TMU
<u></u>	me me	1	Α,			Α,	Bo	Ρ,	Ao	2	80
1	SHOULDER AND UNSHOULDER TOOL BAG	2	Ao			Ao			Ao	 	60
		4	A		G ₃		Во		Ap	3	180
2	BEND AND ARISE		Α	В	G	А	В	Р	Α		
			А	В	G	A	В	P	Α		
3_	SEPARATE PIECES		A	В	G	Α	В	Р	Α		
"			A	8	G	A	В	Р	A	ļ	
4	PUT LEG SETS IN TOOL BAG		A .	B	G	A	8	P	<u> </u>		
			A	В	G	<u> </u>	В	P	<u> </u>		
			A .	<u>B</u>	G	<u> </u>	<u>B</u>	P	_ <u>A</u>		
	•		A	B	G G	<u> </u>	В	P P	<u>A</u>		
			A	В	G	A	В	P			<u></u>
			A	8	G		 B	P	A	 	
			А	В	G	A	В	Р	A		
			А	В	G	A	В	P	A		
			A	В	G	Α	В	P	A		
			А	В	G	Α	В	Р	Α		
			Α	В	G	М	x	1	Α		
			A	В	G	М	x	1	Α		
			A	В	G	М	<u> </u>		A		
			Α	<u>B</u>	G	M	<u> </u>	-			
			A	В	G	M	<u> </u>	1	_ <u>A</u>		·
			A	В	G	M	×	1	A		
			A	<u>B</u>	G	M	×	-	A		
		3	A / BoG							105	18,900
)	A B G			-70		B P		705	10, 100
			A B G					ВР			
			A B G	A	ВР		A	в Р	Α		
			A B G	A :	ВР		Α	ВР	Α		
			A B G	A	в Р		Α	ВР	A		
			A B G					B P			
			ABG					ВР			
			A B G					ВР			
			A B G					ВР			
			A B G					3 P			
			A B G					B P			
			A B G					ВР			
								····			
	Į ·		1								
			1								

MOST - calculation

3011.04 DATE 8/9/84

SIGN. FWM/TLC PAGE 10-195

COOLING COIL INSTALLATION

ACTIVITY LAY OUT HOLES ON LEGS

CONDIT	IONS		

ASSE	MBLY	AKEA
------	------	------

	ASSEMBLY AREA										<u> </u>
NO.	METHOD	NO.	SEQUE	NCE	MOD	EL				FR	-TMU
1		1	Α	В	o G	3 A	Bc	P	Ao	3	- 180
1	GET LEGS OUT OF BAG IN SETS	2	Α			3 A					200
2	POSITION COIL	3	A			3 A:				6	480
	TUSTITION COLL	4	A		_D G		3 B 6			6	840
3	DISTRIBUTE LEGS	5	A		o G					6	540 240
	- d		A-		G G	8 A				6	840
4	PLACE SPACER & MOVE TO EACH LEG	8	А		o G			, P		2.	80
5	POSITION LEG		А	В	G	Α	В	Р	Α		
<u> </u>	7031110W 1218	ļ	A	В			В	P	<u> </u>	 	
6	SCRIBE HOLES	 	A			A		P	A	╂	
		 	A	B	G	<u>A</u>	В	P		<u> </u>	
7	ASIDE LEG TO CENTER PILE		А	8		A	В	P	Α		
8	COLLECT LEGS & PLACE IN BAG		. Ч	В	G	Α	В	Р	Α		
0	CULLECT LEGS & PLACE IN BAG	 	Α	В	G	<u>A</u>	В	P	A	1	
9	SHOULDER AND UNSHOULDER BAG	<u> </u>	A	В		A		P 2	<u>A</u>	 	<u> </u>
			A		G G	A M	<u>B</u>	<u>Р</u>	A	 	
:			А	В	G	М	X	1	A	 	
			А	В	G	М	х	1	Α		
			A	В	G	М	Х		Α	<u> </u>	
		<u> </u>	A	В	G		<u> </u>	1	<u>A</u>	 	•
			A		G	M	×	.	- A	 	
			A		G	М	×	-	A	1	
		6	A 180	G, A	B _o (F	A. R	3) A	Bo	1 A0	(2)6	780
			AB	G A				В			
				G A				ВЕ		-	
				G A	BF			BF	• A		
					8 F				- A	 	
			ав (А	ВБ	A		
			АВ	3 A	ВР		Α	ВГ	À		-
			A B (В		 	
			ABC					BF		 	·
			A B (В			-
	,		а в с					ВЕ			
			А В С	3 A	В	<u> </u>	А	В	• A		
										-	<u> </u>
										-	
		L									
TIME	<u>=</u>									4,1	80
FORM	R-1458						-			·	

MOST - calculation

3011.05

DATE 8/9/84

SIGN. FWM/TLC

PAGE 10-/86

COOLING COIL INSTALLATION

ACTIVITY

DRILL HOLES ON LEGS

ONDI	TIONS ASSEMBLY ADEA		,		
NO.	ASSEMBLY AREA	NO.	SEQUENCE MODEL	FR	TMU
NO.	METHOD	1	A, Bo G, A, Bo P, Ao	2	80
,	CHAMPER AN INCHAMPED THAT BAG	2	Al Bo G3 Al Bo Pl Ao	5	30
	SHOULDER OR UNSHOULDER TOOL BAG	3	Al Bo Gl Al Bo P3 Ao	12	72
2	GET LEG SETS & TOOLS	4	Al Bo Gi Al Bo Pi Ao		40
	<u>GE1 EEG 3E13 G 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</u>	6	A67 B0 G3 A67 B0 P3 A1	2	282
	OUT OF BAG	9	(AI Bo Gs) AI BO P6 AO		900
	OUT OF BRY	11	Ao Bo Go Al Bo P3 Ao	6	241
?	POSITION OR ASIDE EACH LEG		A B G A B P A		
<u>ڪ</u> _	103/11/04 08 7:0102 270:	-	ABGABPA		
يا	GET & ASIDE HAMMER		A B G A B P A		
	GET ASIGE HAMMEN		ABGABPA		
5	GET PUNCH & PUNCH EACH LEG		ABGABPA		
<u> </u>	GET TONOS T TONOS CAS:		A B G A B P A		
6	GET CHUCK & PLACE OR RETURN		A B G A B P A		
			A B G A B P A		
7	TIGHTEN CHUCK IN HOLDER		A B G A B P A		
			A B G A B P A		
8	CHANGE DRILL BIT (CODE 1004.14)		A B G A B P A		
		13	Al Bo GI M3 Xo 13 Ao	24	1921
9	SELECT PAIR OF LEGS	14	A I B O G I M I X O I O A O	2	60
10	OPEN AND CLOSE VISE		A B G M X I A A B G M X I A		
10	OPEN AND CLOSE VISE		A B G M X I A	 	
П	PLACE LEGS IN VISE		A B G M X I A		
			ABGMXI, A		
12	HAND FEED DRILL BIT & SWITCH		ABGMXIA		
		5	A, BOG, A, BOP3 AOF)A, BOP, AO	(6) 6	246
	ON FOFF (CODE 1004.21)	7	A1BOGIAOBOPOFIO A0BOPOAO		12
			A, Bo G, AoBo Po Flo AoBo Po Ao	12	144
13	POSITION WORKPIECE		ABGABP ABPA	<u> </u>	
			ABGABP ABPA	L	
14	SELECT SPEED		ABGABP ABPA	-	ļ
	3/11		ABGABP ABPA	ļ	
15	PROCESS TIME TO DRILL 3/16 DIA		ABGABP ABPA	<u> </u>	<u> </u>
	1		ABGABP ABPA	ļ	
	HOLE (MAT'L & COND. CODE 0013		ABGABP ABPA	 	
	@ 3/16" DEPTH)		A B G A B P A B P A	 	
	@ 7/16 DEPTH)		A B G A B P A B P A		ļ
16	PROCESS TIME TO DRILL 916 DIA		A B G A B P A B P A		
16	i .	8	2400	2	4 80
	HOLE (MAT'L & COND CODE	12	530	24	12,72
		15	67	12	80
	0013 @ 3/16" DEPTH)	16	108	12	1,29
		~	1-2		يحب

MOST - calculation

3011.05

DATE 8/9/84

SIGN. FWM/TLC PAGE 10-187

COOLING COIL INSTALLATION

ACTIVITY

DRILL HOLES ON LEGS

CONDITIONS

ASSEMBLY AREA

	ASSEMBLY AKEA										
NO.	METHOD	NO.	SEQUE	NCE	MODE	L.				FR	TMU
		17	A	B	0 G 1	A	ВС	P3	Ao	12	720
17	REMOVE LEGS FROM VICE	20	A	В	o G3	Aj	Во	P	Ao	5	.300
			А	В		Α	В	Р	A		
	& RESTACK IN SETS		А	В	G	Α	В	Р	Α	ļ <u> </u>	
_			A	В	G	Α	8	P	Α		
18	LOOSEN CHUCK		Α	В	G	Α	В	Р	A	ļ	
	_	<u></u>	A	8	G	A	В	P	Α		<u> </u>
19	TAP UNTIL RELEASED		A	В	G	_ <u>A</u>	В	Р	_A	<u> </u>	
. .	A		A	В	G	Α	В	Р	Α	<u> </u>	
20	PUT LEG SETS & TOOLS	ļ	A_	В	G	A	В	P	A		<u> </u>
		<u> </u>	A .	В	G	<u> </u>	В	Р	_ <u>A</u>	↓	
	INTO BAG		A	8	G	A	<u>B</u> _	<u>Р</u>	<u> </u>	↓	
ļ		 	Α	8	G	Α_	<u>B</u>	P	<u>A</u>	 	
i			A	8	G	<u>A</u>	<u>B</u>	P	<u>A</u>	 	
ĺ			A	<u>B</u>	G	<u>A</u>	<u>B</u>	P	<u>A</u>	 	
			A	B B	G G	A	В	P	Α	 	
j	•		A	<u>В</u>	G	A	8 B	P P	A	 	
			A	В	G	M	Х	1	Ā	-	
			A		G	M	×	1	A	 	
			A	В	G	M	X	÷	A	 	
			Α	В	G	М	x	1	A		
			Α	В	G	М	×	1	A		
			А	В	G	М	×	1	A		
			Α	В	G	М	×	ı	Α		
!			Α	В	G	M .	х	1	Α		
		18	A 1 BOG	1 A0	80 PO	Flo	A _O	Bo Pc	Ao_		120
		19	A _I B _O G	LAI	BoPl	F6					120
			A B G					B P			
			A B G					3 P		 	
1			A B G					B P			
			A B G			 -		3 P		\vdash	-
}		$\vdash \vdash \vdash$	ABG					3 P 3 P			
		- 1	A B G					3 P			-
ļ			ABG					3 P			
	· · · · · · · · · · · · · · · · · · ·		A B G					P			
}			A B G					P			
			A B G					3 P			
			A B G					3 P			
		I									
TIME :	•									21	980
										را د	,980
~ ^ ^ 1	R_1458										

CODE **MOST** - calculation 3011.06 INGALLS 8/9/84 Shipbuilding SIGN. FWM/TLC COOLING COIL INSTALLATION PAGE 10-188 ACTIVITY BOLT UP LEGS CONDITIONS ·ASSEMBLY AREA NO. SEQUENCE MODEL METHOD TMU Ao B6 G, A, Bo Pi 600 2 SHOULDER AND UN SHOULDER TOOL BAG AI BO G3 A1 BOPI A o 180 4 A G, Bo Po 900 GET LEG SETS A G OUT OF BAG Α G В MATCH LEG FIND NUMBERS G 8 P MOVE BETWEEN BOLTING LOCATIONS Α В Α В 5 SET UP TO BOLT (CODE 1005.02) Α В G Α Α В Α В Α POSITION BOLTS (CODE 1005.03) А В Α В TURN BOLTS (1/2") (CODE 1005.04) В TURN BOLTS (Yz") (CODE 1005.05) Α Α G P В Α Α G В А A В Α В G Α м Х Α В М ı ı Α G В М A Α В G M Х ı A 1 80G1 A 080 PO A 1 TIZ A 3 86 P1 AO 1500 ABGABP ABPA ABGABP ABPA BGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA ABGABP ABPA NOTE - ALSO INCLUDED IS REMOVING ABGABP ABPA TEMPORARY BOLTS AFTER LEGS ARE ABGABP ABPA WELDED TO THE OVERHEAD AND ABGABP ABPA BOLT-UP WITH SELF LOCKING BOLTS ABGABP ABPA AFTER THE LEGS HAVE BEEN PAINTED ABGABP ABPA ABGABP ABPA 5 970 3 2,910 6 (410) (12)3 14.760 (12)2 13,416 559 8 (810) (12) 9720

43,986

TIME =

FORM R-1458